COMPUTER PROGRAM FOR INCREMENT-DECREMENT
(MULTISTATE) LIFE TABLE ANALYSIS: A
USER'S MANUAL TO LIFEINDEC

Frans Willekens

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FOREWORD

        Interest in human settlement systems and policies has been
a central part of urban-related work at IIASA since its incep-
tion. From 1975 through 1978 this interest was manifested in the
work of the Migration and Settlement Task, which was formally
concluded in November 1978. Since then, attention has turned to
dissemination of the Task's results and to the conclusion of it
comparative study which, under the leadership of Frans Willekens,
is carrying out a comparative quantitative assessment of recent
migration patterns and spatial population dynamics in all of
IIASA's 17 NMO countries.

        The Migration and Settlement Comparative Study developed a
computer program for multiregional (multiradix) life table analy-
sis. This paper describes a modification of that program into
one more suited for the calculation of single-radix increment-
decrement life tables. A four-state marital-status life table
for Belgium and a two-state working life table for Denmark illus-
trate the use of the program.

        Papers summarizing previous work on migration and settlement
at IIASA are listed at the back of this paper.

                                        Andrei Rogers
                                        Chairman
                                        Human Settlements
                                        and Services Area

ABSTRACT

This paper lists and describes a FORTRAN computer program to calculate increment-decrement (multistate) life tables. It has been adapted from the program for multiregional life table analysis, published in Willekens and Rogers (1978). The use of the program is illustrated for a four-state marital-status life table for Belgium and a two-state working life table for Denmark.

CONTENTS

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1. INTRODUCTION

Multistate increment-decrement life tables have a recent but
active history. Rogers (1973, 1975) generalized the single-
decrement life table (Keyfitz 1968) to study the mortality *and*
migration of a population in a multiregional system, where sta-
tuses of life are considered as regions of residence. A major
virtue of Rogers's approach is the use of matrix notation. He
showed that by using matrix algebra the study of a multistate
population is not at all complicated and that some restrictive
assumptions are no longer needed. Independent of Rogers, Schoen
and Nelson (1974) and Schoen (1975) developed a procedure to com-
pute several multistate life table statistics and applied it to
marital status patterns. The main virtue of Schoen's work is its
attention to the correct estimation of probabilities of transi-
tion between the states of an increment-decrement life table.
Schoen described a simultaneous solution of all transition proba-
bilities in terms of observed or life table rates. Rogers and
Ledent (1976) have shown that the complex formulae presented by
Schoen may be greatly simplified by using matrix notation. They
also indicated some of the similarities and differences between
the Schoen (1975) and the Rogers (1975) approaches.

A third independent attempt to developing multistate life tables was carried out by Hoem (1970, 1977) and Hoem and Fong (1976) in the application of labor force participation. Hoem approached the problem of multistate analysis from the perspective of the statistician. He devoted attention to assumptions underlying multistate life table models and to the relation between these models and the theory of stochastic processes.

In the last few years, considerable "deepening" of the analysis has occurred, with the general aim of evaluating and integrating the various perspectives in order to derive a multistate life table that is theoretically correct and based on only a few restrictive assumptions. For these more recent contributions, see Ledent (1978, 1979), Krishnamoorthy (1977), Rees (1978), Willekens (1978, 1979), Willekens et al. (1979), and Schoen and Land (1977).

The computer program described in this user's manual is an adapted version of the life table program presented in Willekens and Rogers (1978). The core of the program is the same since the algorithm is a multiregional life table calculation, but the controls of some DO-loops differ and some conveniences in input-output arrangements are introduced. The main differences are related to the following five points.

(i)   The multiradix situation. The original version of the Willekens-Rogers program only computes life tables for multistate systems in which the number of cohorts (people of the same age in the same state) is equal to the number of states (multiradix situation). In other words, each state should be nonempty at all ages. This is generally true in a multiregional system and for middle ages in a working life or marital status life table. In the latter life tables, however, everyone is in the same state (inactive or never married) at low ages, and the birth cohort or radix consists of a group of people in one state only (uniradix situation). This program allows the number of radices or cohorts to differ from the number of states.

(ii)   The age interval. In the earlier version, the age
       interval had to be the same for all age groups, al-
       though the interval could be any number of years.
       In this version the age intervals may be highly un-
       equal. The age interval is not treated as a param-
       eter but as a variable.

(iii) The inputs. Input data may consist either of abso-
       lute numbers of people in each state and transitions
       between states or they may consist of transition
       rates (occurrence/exposure rates).

(iv)   The outputs. In addition to the tables produced by
       the earlier version of the program, summary tables
       are also produced.

(v)   The probability calculation. The transition prob-
       abilities are calculated following the so-called
       Option 3 Method (Willekens and Rogers 1978) by the
       subroutine PROBSC.

2. PROGRAM DESCRIPTION

For a description of the methodology of increment-decrement (multistate) life table construction and for the program description, the reader is referred to Willekens and Rogers (1978). The concept underlying the program is that of a modular system. It consists of a set of subroutines, each of which performs a specific task, such as matrix inversion, life history calculation, summary table printing, and so on. The main program is kept very short; it coordinates the computations through CALL statements. Information is transmitted from one subroutine to another as follows:

- arrays: labeled COMMON statements,
- parameters: argument string in the CALL statement.

The subroutines consist of frequently used general purpose subroutines and special purpose subroutines:

(i)   General purpose subroutines:

MULTIP: matrix multiplication
INVERT: matrix inversion

(ii) Special purpose subroutines:

DATINCR: reads and prints the data as they are read in; computes the observed rates if necessary

PRELIM: performs a preliminary analysis with the data

PROBSC: computes and prints the transition probabilities

HIST: computes and prints the complete life histories of the cohorts

LIFE: computes and prints the increment-decrement life table

TAB: prints a summary table in case the number of states equals 2

2.1   The General Purpose Subroutines

a.   **MULTIP:**   SUBROUTINE MULTIP (N,K,L)

Task:	multiplication of two matrices $\underset{\sim}{A}1$ and $\underset{\sim}{B}$
	$\underset{\sim}{C} = \underset{\sim}{A}1 * \underset{\sim}{B}$
Parameters:	N: number of rows of $\underset{\sim}{A}1$
	K: number of columns of $\underset{\sim}{A}1$ (and consequently, number of rows of $\underset{\sim}{B}$)
	L: number of colums of $\underset{\sim}{B}$
Input:	- parameters in the CALL statement
	- matrices $\underset{\sim}{A}1$ and $\underset{\sim}{B}$ in a labeled COMMON:
	COMMON/CMUL/A1(N,K), B(K,L), C(N,L)
Output:	the result of the matrix multiplication stored in the N x L matrix $\underset{\sim}{C}$
Printing:	none

b.   **INVERT:**   SUBROUTINE INVERT (NR,NRADIX)

Task:	inversion of the matrix $\underset{\sim}{C}C$
Parameters:	NR: rank of $\underset{\sim}{C}C$
	NRADIX: see Section 3
Input:	- parameter NR in the CALL statement (the subroutine assumes that CC is nonsingular and that all the diagonal elements are nonzero)
	- matrix $\underset{\sim}{C}C$ in labeled COMMON:
	COMMON/CINV/CC(NR,NR)
Output:	the original matrix $\underset{\sim}{C}C$ replaced by the inverted matrix
Printing:	none

2.2   The Special Purpose Subroutines

a.   DATINCR: SUBROUTINE DATINCR (NA,NOPEN,NY,ZFNY,NR,
NRADX,NDAT)

Task: - reads data and prints them as they are
read in (for details, see Section 3 on
preparation of data deck)
- computes observed rates

Parameters: see Section 3

Input: see Section 3

Output: data as they are read in, data stored
in labeled COMMON

b.   PRELIM: SUBROUTINE PRELIM (NA,NR,NDAT)

Task: performs a preliminary analysis with the
data: computes and prints age composi-
tions, rates, mean ages, etc.

Parameters: see Section 3

Input: DATINCR must precede PRELIM

Output: tables

c.   PROBSC: SUBROUTINE PROBSC (NA,NR,NOPEN,IPROB)

Task: computes and prints the transition prob-
abilities following Option 3

Parameters: NA,NR,NOPEN: see Section 3
IPROB is equal to 3

Input: DATINCR must precede PROBSC

Output: tables

Algorithm   see Willeken and Rogers (1978, Section 2.7)

d.   HIST: SUBROUTINE HIST (NA,NR,NRADIX,IHIST)

Task: computes and prints the complete life his-
tories of each cohort

Parameters: NA,NR,NRADIX: see Section 3
IHIST: parameter indicating that life
histories are computed (if sub-
routine HIST is called, IHIST takes

the value of one and the computation
of the matrices $\underset{\sim}{\ell}(x)$ is skipped in
the subroutine LIFE.
If HIST is not called before LIFE,
then IHIST is zero and $\underset{\sim}{\ell}(x)$ is com-
puted in LIFE)

Input:	PROBSC must precede HIST
Output:	tables
Algorithm:	see Willekens and Rogers (1978, Section 2.1)

e. **LIFE:** SUBROUTINE LIFE (NA,ZFNY,NR,NRADIX,IHIST,
ILIF,NOPEN)

Task: computes and prints the multiregional life
table

Parameters: NA,ZFNY,NR,NRADIX,NOPEN: see Section 3

IHIST: see HIST

ILIF: parameter indicating that life table
is computed (if subroutine LIFE is
called, ILIF takes the value of one)

Input: PROBSC must precede LIFE
HIST may precede LIFE but not necessarily.

Output: increment-decrement life table

Algorithm: see Sections 2.2 to 2.6 of Willekens and
Rogers (1978)

f. **TAB:** SUBROUTINE TAB (NA,NR,NRADIX)

Task: prints summary table if the number of re-
gions equals 2

Parameters: NA,NR,NRADIX: see Section 3

Input: subroutine LIFE must precede TAB

Output: tables

2.3 Main Program

The main program is kept very short. Its function is to co-
ordinate the calculations, and it therefore consists merely of
CALL statements.

3. PREPARATION OF THE DATA FILE

All data are read in at the beginning of the program by the subroutine DATINCR. The data are read in fixed format from unit 5 (the conventional unit for cards in most computers). The card sequence is as follows:

- a. Identification card
- b. Parameter card
- c. Title cards
- d. Age composition (optional)
- e. Specification (names) of various states
- f. Sizes of cohorts
- g. Transition data
- h. "END" card

a. Identification Card

The first card of the deck is an identification card. It may contain any information for the user. The identification card is read in and saved for the page heading.

b. Parameter Card

The parameter card contains instructions to the program concerning the way the data are presented and concerning the desired computations. The parameter names, their interpretation, required format, and default values are given in Table 1.

c. Title Cards

These are NU title cards. There is no limit on NU, as long as it is greater than zero. Each title card is printed out as it is read in. The first 72 columns of the card may be used. The title is not stored.

d. Age Composition (optional)

The program can handle any sequence of age intervals. We consider three types of sequences:

Table 1. Parameter specification for LIFEINDEC.

COLUMNS	FORMAT	NAME	INTERPRETATION	DEFAULT VALUE
1-2	I2	NAS	Starting (lowest) age for which data are available	0
3-4	I2	NAE	Highest age of population considered (NAE is the first age of the last interval)	---
5-6	I2	NASS	Lowest age of population considered in life table calculation (the life table is computed for cohorts of exact age NASS) In general NAS = NASS = 0 for life tables yielding population based measures; and NAS ≠ NASS for life tables giving state specific measures (except in multiradix case)	NAS
7-8	I2	NOPEN	Character of last age interval. NOPEN = 1: last age interval is open-ended NOPEN = 2: last age interval is not open-ended but is of a given interval (this may be the case in working life tables with highest age being some advanced age of retirement, age 70 say. In this case the life expectancy at age x denotes the expected number of years lived up to the age of 70 + NY)	0
9-10	I2	NR	Number of states	---
11-12	I2	NRADX	Number of cohorts (i.e., number of nonempty states at age NASS)	1
13-14	I2	NY	Age interval: usually NY = 1 or 5 - if NY = 98: fixed intervals of 5 years except for the first age groups which are 0-1 and 1-4 - if NY = 99: variable age intervals	---
15-16	I2	NU	Number of title cards	---
17-20	I4	INIT	Base year (year to which data refer)	---
21-22	I2	NDAT	Specification of the transition data NDAT = 1: absolute numbers NDAT = 2: occurrence/exposure rates	---

(i)   Fixed intervals. If all age groups are of the same
       length, then the length is given by the parameter NY
       and an age composition card is not needed.

(ii)   Fixed intervals, except for the first age groups. I t
       frequently happens in demographic analysis that all
       age groups consist of a 5-year interval except for the
       first age groups which are 0-1 and 1-4. If this is the
       case, i.e., if the data are supplied for this age struc-
       ture, then NY must be given the value of 98 and the sub-
       routine DATINCR generates the desired age structure.
       Consequently, the age composition card is not needed.

(iii) Variable intervals. If the age groups are of variable
       length, the number of age groups and the age structure
       must be read in. Two cards are required:

       1. number of age groups (NA):

COLS	FORMAT	VAR. NAME
1-2	I2	NA

       2. age composition: age at beginning of each interval:

COLS	FORMAT	VAR. NAME
1-72	36I2	NAGE(X), X = 1, NA

       If variable intervals are used (the age composition
       cards must be read) NY must be given a value of 99.

e. Specification (names) of Various States

In listing the output, each state is identified by a name
or label. Each name consists of a maximum of eight characters.
Any character can be used. The names appear in sequence on the
same card. The last name in the sequence is that of the total
system and may be the name of the country.

COLS	FORMAT	VAR. NAME
1-72	9A8	REG(I), I = 1, NR1

where NR1 = NR + 1. The name of the country is contained in
REG(NR1).

f. Sizes of Cohorts

The sizes of the cohorts appear in sequence on one card.

COLS	FORMAT	VAR. NAME
1-72	9F8.0	RADIX(I), I = 1, NR

g. Transition Data

Data related to each state are given sequentially, i.e.

- observations for state 1
- observations for state 2

$$\vdots$$

- observations for state NR.

Each card (followed by continuation cards if necessary) contains specific information for all ages. *All transitions should refer to the same time period, e.g., one year.* Two types of data are distinguished:

1. Data consisting of absolute numbers (NDAT = 1).

2. Data consisting of occurrence/exposure rates (NDAT = 2).

1. Absolute Numbers

For each state, the data consist of the age structure for:
- population
- deaths
- transitions from the given state to the various other states

The sequence of cards and the formats are as follows (in the case of 18 age groups):

Observations for State I

CARD #	COLS	FORMAT	VAR.NAME
1a	1-70	7F10.0	POP(X,I),X = 1,7
1b	1-70	7F10.0	POP(X,I),X = 8,13
1c	1-40	4F10.0	POP(X,I),X = 14,18
2a	1-72	9F8.0	DEATH(X,I),X = 1,9
2b	1-72	9F8.0	DEATH(X,I),X = 10,18
3a	1-72	9F8.0	OMIG(X,1,I),X = 1,9
3b	1-72	9F8.0	OMIG(X,1,I),X = 10,18
.			
.			
.			
2+2(NR-1)a	1-72	9F8.0	OMIG(X,NR,I),X = 1,9
2+2(NR-1)b	1-72	9F8.0	OMIG(X,NR,I),X = 10,18

The cards 3a through 2+2(NR-1)b are grouped by $J = 1,NR$.

2. Occurrence/Exposure Rates

For each state the age schedule of mortality and transitions to the various other states is given as follows:

CARD #	COLS	FORMAT	VAR.NAME
1a	1-72	9F8.6	RATD(X,I),X = 1,9
1b	1-72	9F8.6	RATD(X,I),X = 10,13
2a	1-72	9F8.6	RATM(X,1,I),X = 1,9
2b	1-72	9F8.6	RATM(X,1,I),X = 10,18
.			
.			
.			
1+2(NR-1)a	1-72	9F8.6	RATM(X,NR,I),X = 1,9
1+2(NR-1)b	1-72	9F8.6	RATM(X,NR,I),X = 10,18

The cards 2a through 1+2(NR-1)b are grouped by $J = 1,NR$.

Several transitions may be impossible, such as the transition from widowed to never-married. Impossible transitions are replaced by blank cards (i.e., all zero's).

h.   "END" Card

The last card is an "END" card. Since all data are read twice, first to print the input file as it is, and second to store the data, the "END" card is read to identify the end of the input file in the first reading. When this card is reached, the input file is rewound. The "END" card may be a colored card to show the end of the deck to the user.

4. LISTING OF THE PROGRAM LIFEINDEC

```
C
C   ---------------------------------------------------------------
C
C COMPUTER PROGRAM FOR MULTISTATE TABLES OF WORKING LIFE AND MARITAL STATUS
C      (INCREMENT-DECREMENT LIFE TABLES)
C
C PROGRAM MAININCR.FTN IN DIRECTORY FRANS/INCRTAB
C
C  ATTENTION     ZERO = 0
C
C    PARAMETERS
C    NAS = LOWEST AGE FOR WHICH DATA ARE AVAILABLE (E.G. 0 )
C    NAE = HIGHEST AGE OF POPULATION CONSIDERED (E.G 90 )
C    NASS = LOWEST AGE OF POPULATION CONSIDERED IN LIFE TABLE
C            CALCULATION
C     NA = (NAE - NASS)/NY +1
C    NOPEN = CHARACTER OF LAST AGE INTERVAL
C      NOPEN=1 LAST AGE INTERVAL IS OPEN-ENDED
C      NOPEN=2 LAST AGE INTERVAL IS CLOSED
C    NR    = NUMBER OF STATES
C    NRADX = NUMBER OF COHORTS
C    NY    = AGE INTERVAL OR TYPE OF AGE GROUPING
C    NU    = NUMBER OF TITLE CARDS
C    INIT  = BASE YEAR
C    NDAT  = SPECIFICATION OF TRANSITION DATA
C      NDAT=1 ABSOLUTE NUMBERS
C      NDAT=2 OCCURRENCE/EXPOSURE RATES
C
C   ---------------------------------------------------------------
C
        CALL DATINCR (NA,NOPEN,NY,ZFNY,NR,NRADX,NDAT)
        NAS=NA
        IF (NOPEN.EQ.2) NAS=NA+1
C
C       CALL PRELIM (NA,NR,NDAT)
        CALL PROBSC (NA,NR,NOPEN,3)
        ILIF=0
        IHIST=0
        CALL HIST (NAS,NR,NRADX,IHIST)
        CALL LIFE (NA,ZFNY,NR,NRADX,IHIST,ILIF,NOPEN)
        IF (NR.EQ.2) CALL TAB (NA,NR,NRADX)
        STOP
        END
```

```
C
      SUBROUTINE DATINCR (NA,NOPEN,NY,ZFNY,NR,NRADX,NDAT)
      DIMENSION HUP(60),HUD(60)
      DIMENSION TITLE(20)
      COMMON /CNAG/ NAGE(61)
      COMMON /CRATE/ RATD(60,4),RATM(60,4,4)
      COMMON /CRAD/ RADIX(4),RADIXT
      COMMON /CREG/ REG(13)
      COMMON /CTIT/ TIT(20)
      DOUBLE PRECISION REG
      INTEGER X
      DATA DY/4HEND /
C
C ------------------------------------------------------------
C
C READ INPUT FILE AS IT IS AND REWIND
C
C ------------------------------------------------------------
C
  100 CONTINUE
      READ (5,3) (TIT(J),J=1,20)
      PRINT 50, (TIT(J),J=1,20)
   50 FORMAT (1X,20A4)
      IF (TIT(1).NE.DY) GO TO 100
       REWIND 5
C
C ------------------------------------------------------------
C
C  READ PAGE HEADING AND PARAMETER CARD
C
C ------------------------------------------------------------
C
      READ (5,3) (TIT(J),J=1,20)
    3 FORMAT (20A4)
      READ (5,4) NAS,NAE,NASS,NOPEN,NR,NRADX,NY,NU,INIT,NDAT
    4 FORMAT (8I2,I4,I2)
C
C ------------------------------------------------------------
C
C  READ AND PRINT TITLE
C
C ------------------------------------------------------------
C
      PRINT 64
   64 FORMAT (1H1,1X)
      DO 66 I=1,10
   66 PRINT 65
   65 FORMAT (1X)
      DO 67 I=1,NU
      READ (5,3) (TITLE(J),J=1,20)
      PRINT 69, (TITLE(J),J=1,20)
   69 FORMAT (10X,20A4)
   67 CONTINUE
      PRINT 64
      IF (NY.GE.90) GO TO 30
      NA=(NAE-NAS)/NY+1
      NAGE(1)=NAS
      NAA=NA-1
      DO 654 X=1,NAA
  654 NAGE(X+1)=NAGE(X)+NY

      GO TO 33
   30 CONTINUE
      IF (NY.NE.98) GO TO 34
      NAGE(1)=0
      NAGE(2)=1
      NAGE(3)=5
      NZE=NAE/5+2
      DO 32 X=4,NZE
   32 NAGE(X)=NAGE(X-1)+5
      NA=NZE
      GO TO 33
   34 CONTINUE
```

```
C
C READ NUMBER OF AGE GROUPS AND NAGE(X)
C
      IF (NY.NE.99) GO TO 33
      READ (5,35) NA
      READ (5,35) (NAGE(X),X=1,NA)
   35 FORMAT (40I2)
   33 CONTINUE
C
C  IF NOPEN=2 THE LAST AGE GROUPS IS CLOSED; THE VALUE
C  OF NAGE(NA+1) MUST THEREFORE BE KNOWN
C
      NAGE(NA+1)=NAGE(NA)-NAGE(NA-1)
      NAA=NA-1
      ZFNY=FLOAT(NY)
      NR1=NR+1
      READ (5,14) (REG(J),J=1,NR1)
   14 FORMAT (9A8)
      READ (5,15) (RADIX(J),J=1,NRADX)
   15 FORMAT (9F8.0)
      RADIXT=0.
      DO 16 J=1,NR
   16 RADIXT=RADIXT+RADIX(J)
C
C ------------------------------------------------------------
C
      DO 10 I=1,NR
      IF (NDAT.NE.1) GO TO 250
      READ (5,17) (HUP(J),J=1,NA)
   17 FORMAT (7F10.0)
      READ (5,15) (HUD(J),J=1,NA)
      DO 18 X=1,NA
      RATD(X,I)=0.
      IF (HUP(X).NE.0.) RATD(X,I)=HUD(X)/HUP(X)
C
C  IF RATD(NA,I)=0, THEN THE DEATH RATE IN THE LAST AGE GROUP IS
C  SET EQUAL TO 0.4 (TO AVOID RMLA(J,I) TO BE ZERO AND TO ENABLE THE
C  CALCULATION OF L(NA,I,J)
C
      IF (X.EQ.NA.AND.RATD(X,I).EQ.0.) RATD(X,I)=0.4
   18 CONTINUE
      DO 19 J=1,NR
      READ (5,15) (HUD(X),X=1,NA)
      DO 19 X=1,NA
      RATM(X,J,I)=0.
      IF (HUP(X).NE.0.) RATM(X,J,I)=HUD(X)/HUP(X)
   19 CONTINUE
      GO TO 251

  250 CONTINUE
      READ (5,27) (RATD(X,I),X=1,NA)
   27 FORMAT (9F8.6)
      DO 28 J=1,NR
      READ (5,27) (RATM(X,J,I),X=1,NA)
   28 CONTINUE
  251 CONTINUE
   10 CONTINUE
C
C
      NA9=NA
      IF (NAS.EQ.NASS) GO TO 720
C WHICH AGE GROUP IS NASS ?
      DO 721 X=1,NA
      IF (NAGE(X).NE.NASS) GO TO 721
      NASSX=X
  721 CONTINUE
      NA9=NA-NASSX+1
       NA1=NA+1
       DO 723 X=NASSX,NA1
      IX=X-NASSX+1
      NAGE(IX)=NAGE(X)
      IF (X.EQ.NA1) GO TO 723
      DO 722 I=1,NR
      RATD(IX,I)=RATD(X,I)
      DO 722 J=1,NR
  722 RATM(IX,J,I)=RATM(X,J,I)
  723 CONTINUE
  720 CONTINUE
```

```
C
C  WRITE RATES
C
      NA=NA9
      PRINT 64
      PRINT 29
   29 FORMAT (1H0,5X,34HOBSERVED OCCURRENCE/EXPOSURE RATES/
     16X,34(1H*)/)
      DO 25 I=1,NR
      PRINT 23, REG(I)
   23 FORMAT (1H0,20X,A8/21X,8(1H*)//)
      PRINT 24, (REG(J),J=1,NR)
   24 FORMAT (5X,3HAGE,3X,9HMORTALITY,2X,4(2X,A8)/)
      DO 25 X=1,NA
      PRINT 26, NAGE(X),RATD(X,I),(RATM(X,J,I),J=1,NR)
   26 FORMAT (5X,I3,2X,F10.6,2X,4F10.6)
   25 CONTINUE
      RETURN
      END
```

```
      SUBROUTINE PRELIM (NA,NR,NDAT)
      DIMENSION HU(4),HULP(4,4),HUU(4)
      DIMENSION POPT(4),DEATHT(4),BIRTHT(4),OMIGT(4,4)
      DIMENSION GRD(4),GRO(4,4),GROT(4)
      DIMENSION CRUDD(4),CRUDO(4,4),CRUDOT(4)
      DIMENSION AGEP(4),AGED(4),AGEF(4),AGEO(4,4),AGEOT(4)
      COMMON /C1/ POP(60,4)
      COMMON /CBIR/ BIRTH(60,4),DEATH(60,4),OMIG(60,4,4)
      COMMON /CNAG/ NAGE(61)
      COMMON /CRATE/ RATD(60,4),RATM(60,4,4)
      COMMON /CREG/ REG(13)
      COMMON /CTIT/ TIT(20)
      DOUBLE PRECISION REG,REGL
      INTEGER X,XX
        REAL L
      NAA=NA-1
       XZB=1.
       XZD=1.
       XZO=1.
C
      IF (NDAT.EQ.2) GO TO 520
      PRINT 1, (TIT(J),J=1,20)
    1 FORMAT (1H1,50X,20A4)
      PRINT 65
   65 FORMAT (1H0,5X,35HOBSERVED POPULATION CHARACTERISTICS/6X,
     135(1H=)/)
C ----------------------------------------------------------
C PRINT NUMBER OF PEOPLE, BIRTHS,DEATHS AND MIGRANTS ;
C ----------------------------------------------------------
      ISKIP=2
      DO 6 I=1,NR
       IF (ISKIP.NE.I) GO TO 164
       PRINT 165
  165 FORMAT (1H1/1X)
      ISKIP=ISKIP+1
  164 CONTINUE
      PRINT 15, REG(I)
   15 FORMAT (//5X,6HSTATUS,3X,A8/5X,17(1H-))
      PRINT 16,REG(I)
   16 FORMAT (3X,3HAGE,1X,10HPOPULATION,4X,6HBIRTHS,4X,6HDEATHS,5X,
     115HTRANSITION FROM,1X,A8,1X,2HTO)
      IF (NR.LE.10) PRINT 17,(REG(J),J=1,NR)
      IF (NR.GT.10) PRINT 80, (REG(J),J=1,NR)
   17 FORMAT (37X,10(1X,A8))
   80 FORMAT (36X,12A8)
      PRINT 66
   66 FORMAT (1X)
      DO 14 X=1,NA
      IF (NR.LE.10) PRINT 8, NAGE(X),POP(X,I),BIRTH(X,I),DEATH(X,I),
     1(OMIG(X,J,I),J=1,NR)
   14 IF (NR.GT.10) PRINT 81, NAGE(X),POP(X,I),BIRTH(X,I),DEATH(X,I),
     1(OMIG(X,J,I),J=1,NR)
    8 FORMAT (3X,I3,1X,3F10.0,10F9.0)
   81 FORMAT (2X,I3,1X,3F10.0,12F8.0)
      POPT(I)=0.
      DEATHT(I)=0.
      BIRTHT(I)=0.
      DO 41 J=1,NR
   41 OMIGT(J,I)=0.
      DO 42 X=1,NA
      POPT(I)=POPT(I)+POP(X,I)
      DEATHT(I)=DEATHT(I)+DEATH(X,I)
      BIRTHT(I)=BIRTHT(I)+BIRTH(X,I)
      DO 42 J=1,NR
      OMIGT(J,I)=OMIGT(J,I)+OMIG(X,J,I)
   42 CONTINUE
      IF (NR.LE.10) PRINT 40, POPT(I),BIRTHT(I),DEATHT(I),
     1(OMIGT(J,I).J=1,NR)
      IF (NR.GT.10) PRINT 82, POPT(I),BIRTHT(I),DEATHT(I),
     1(OMIGT(J,I),J=1,NR)
   40 FORMAT (/1X,5HTOTAL,1X,3F10.0,10F9.0)
   82 FORMAT (/1X,5HTOTAL,3F10.0,12F8.0)
    6 CONTINUE
```

```
C ------------------------------------------------------
C COMPUTE AND PRINT PERCENTAGE DISTRIBUTION
C COMPUTE AND PRINT MEAN AGES
C ------------------------------------------------------
      PRINT 44
44    FORMAT (1H1,10X,24HPERCENTAGE DISTRIBUTIONS/11X,24(1H*)/)
      ISKIP=2
      DO 45 I=1,NR
      IF (ISKIP.NE.I) GO TO 166
      PRINT 165
      ISKIP=ISKIP+1
166   CONTINUE
      PRINT 15, REG(I)
      PRINT 16, REG(I)
      IF (NR.LE.10) PRINT 17, (REG(J),J=1,NR)
      IF (NR.GT.10) PRINT 80, (REG(J),J=1,NR)
      PRINT 66
      ZP=0.
      ZB=0.
      ZD=0.
      DO 700 J=1,NR
700   HU(J)=0.
      AGEP(I)=0.
      AGED(I)=0.
      DO 68 J=1,NR
68    AGEO(J,I)=0.
      DO 46 X=1,NA
      Z2=0.
      Z3=0.
      Z1=100.*POP(X,I)/POPT(I)
      IF (DEATHT(I).NE.0.) Z3=100.*DEATH(X,I)/DEATHT(I)
      IF (BIRTHT(I).NE.0.) Z2=100.*BIRTH(X,I)/BIRTHT(I)
      ZP=ZP+Z1
      ZB=ZB+Z2
      ZD=ZD+Z3
      DO 148 J=1,NR
      HUU(J)=0.
      IF (OMIGT(J,I).EQ.0.) GO TO 148
      HUU(J)=100.*OMIG(X,J,I)/OMIGT(J,I)
      HU(J)=HU(J)+HUU(J)
148   CONTINUE
      IF (NR.LE.10) PRINT 47, NAGE(X),Z1,Z2,Z3,(HUU(J),J=1,NR)
      IF (NR.GT.10) PRINT 84, NAGE(X),Z1,Z2,Z3,(HUU(J),J=1,NR)
47    FORMAT (3X,I3,1X,3F10.4,10F9.4)
84    FORMAT (2X,I3,1X,3F10.4,12F8.4)
      IF (X.LT.NA) IZ=NAGE(X+1)-NAGE(X)
      IF (X.EQ.NA) IZ=NAGE(X)-NAGE(X-1)
      Z=FLOAT(NAGE(X))+FLOAT(IZ)*0.5
      Z=Z/100.
      AGEP(I)=AGEP(I)+Z*Z1
      AGED(I)=AGED(I)+Z*Z3
      AGEF(I)=AGEF(I)+Z*Z2
      DO 67 J=1,NR
67    AGEO(J,I)=AGEO(J,I)+Z*HUU(J)
46    CONTINUE
      IF (NR.LE.10) PRINT 147, ZP,ZB,ZD,(HU(J),J=1,NR)
      IF (NR.GT.10) PRINT 85, ZP,ZB,ZD,(HU(J),J=1,NR)
147   FORMAT (/1X,5HTOTAL,1X,3F10.4,10F9.4)
85    FORMAT (/1X,5HTOTAL,3F10.4,12F8.4)
      IF (NR.LE.10) PRINT 38, AGEP(I),AGEF(I),AGED(I),(AGEO(J,I),J=1,NR)
      IF (NR.GT.10) PRINT 86, AGEP(I),AGEF(I),AGED(I),(AGEO(J,I),J=1,NR)
38    FORMAT (1X,5HM.AGE,1X,3F10.4,10F9.4)
86    FORMAT (1X,5HM.AGE,3F10.4,12F8.4)
45    CONTINUE
```

```
C -----------------------------------------------------------
C COMPUTE AND PRINT OBSERVED RATES, GROSS RATES, MEAN AGES OF SCHEDULES
C COMPUTE AND PRINT CRUDE RATES
C -----------------------------------------------------------
      PRINT 1, (TIT(J),J=1,20)
      DO 635 I=1,NR
      CRUDD(I)=DEATHT(I)/(POPT(I)*XZD)
      Z=0.
      DO 69 J=1,NR
      Z=Z+OMIGT(J,I)
   69 CRUDO(J,I)=OMIGT(J,I)/(POPT(I)*XZO)
      CRUDOT(I)=Z/(POPT(I)*XZO)
  635 CONTINUE
      DO 5  I=1,NR
      DO 5  X=1,NA
      RATD(X,I)=0.
      IF (POP(X,I).NE.0.) RATD(X,I)=DEATH(X,I)/(POP(X,I)*XZD)
      DO 21 J=1,NR
      RATM(X,J,I)=0.
   21 IF (POP(X,I).NE.0.) RATM(X,J,I)=OMIG(X,J,I)/(POP(X,I)*XZO)
    5 CONTINUE
C
  520 CONTINUE
C
      DO 335 I=1,NR
      GRD(I)=0.
      HU(I)=0.
      HUU(I)=0.
      DO 36 J=1,NR
      HULP(J,I)=0.
   36 GRO(J,I)=0.
      DO 335 X=1,NA
      GRD(I)=GRD(I)+RATD(X,I)
      IF (X.LT.NA) IZ=NAGE(X+1)-NAGE(X)
      IF (X.EQ.NA) IZ=NAGE(X)-NAGE(X-1)
      ZZFNY=FLOAT(IZ)
      HU(I)=HU(I)+ZZFNY*RATD(X,I)
      Z=0.
      DO 35 J=1,NR
      Z=Z+RATM(X,J,I)
      GRO(J,I)=GRO(J,I)+RATM(X,J,I)
      HULP(J,I)=HULP(J,I)+ZZFNY*RATM(X,J,I)
   35 CONTINUE
      HUU(I)=HUU(I)+ZZFNY*Z
  335 CONTINUE
      PRINT 20
   20 FORMAT (1H0,5X,34HOBSERVED OCCURRENCE/EXPOSURE RATES/
     16X,34(1H*))
      DO 33 I=1,NR
      GROT(I)=0.
      DO 78 J=1,NR
      GROT(I)=GROT(I)+GRO(J,I)
   78 CONTINUE
      AGED(I)=0.
      DO 30 J=1,NR
   30 AGEO(J,I)=0.
      DO 48 X=1,NA
      IF(X.LT.NA) IZ=NAGE(X+1)-NAGE(X)
      IF (X.EQ.NA) IZ=NAGE(X)-NAGE(X-1)
      Z=FLOAT(NAGE(X))+FLOAT(IZ)*0.5
      IF (GRD(I).GT.0.) AGED(I)=AGED(I)+Z*RATD(X,I)/GRD(I)
      DO 48 J=1,NR
   48 IF (GRO(J,I).GT.0.) AGEO(J,I)=AGEO(J,I)+Z*RATM(X,J,I)/GRO(J,I)
   33 CONTINUE
```

```
       PRINT 31
 31    FORMAT (/20X,11HDEATH RATES/20X,11(1H*)/)
       PRINT 32, (REG(J),J=1,NR)
 32    FORMAT (3X,3HAGE,5X,12(2X,A8))
       PRINT 66
       DO 18 X=1,NA
 18    PRINT 19, NAGE(X),(RATD(X,J),J=1,NR)
 19    FORMAT (3X,I3,3X,F11.6,6F10.6)
       PRINT 37, (HU(J),J=1,NR)
 37    FORMAT (/1X,5HGROSS,3X,F11.6,6F10.6)
       IF (NDAT.EQ.1) PRINT 39, (CRUDD(J),J=1,NR)
 39    FORMAT (1X,5HCRUDE,3X,F11.6,6F10.6)
       PRINT 49, (AGED(J),J=1,NR)
 49    FORMAT (1X,5HM.AGE,3X,F11.4,6F10.4)
       PRINT 73
 73    FORMAT (1H1,19X,16HTRANSITION RATES/20X,16(1H*))
       ISKIP=2
       DO 79 I=1,NR
       AGEOT(I)=0.
       IF (ISKIP.NE.I) GO TO 167
       PRINT 165
       ISKIP=ISKIP+1
 167   CONTINUE
       PRINT 74, REG(I)
 74    FORMAT (/20X,15HTRANSITION FROM,1X,A8,1X,2HTO)
       PRINT 75, (REG(J),J=1,NR)
 75    FORMAT (3X,3HAGE,9X,5HTOTAL,6(2X,A8))
       PRINT 66
       DO 76 X=1,NA
       IF (X.LT.NA) IZ=NAGE(X+1)-NAGE(X)
       IF (X.EQ.NA) IZ=NAGE(X)-NAGE(X-1)
       Z=FLOAT(NAGE(X))+FLOAT(IZ)*0.5
       ZZ=0.
       DO 77 J=1,NR
       ZZ=ZZ+RATM(X,J,I)
 77    CONTINUE
       IF (GROT(I).GT.0.) AGEOT(I)=AGEOT(I)+Z*ZZ/GROT(I)
 76    PRINT 19, NAGE(X),ZZ,(RATM(X,J,I),J=1,NR)
       HHU=HUU(I)
       DO 13 J=1,NR
 13    HU(J)=HULP(J,I)
       PRINT 37, HHU,(HU(J),J=1,NR)
       IF (NDAT.EQ.1) PRINT 39, CRUDOT(I),(CRUDO(J,I),J=1,NR)
       PRINT 49, AGEOT(I),(AGEO(J,I),J=1,NR)
       PRINT 66
 79    CONTINUE
       RETURN
       END
```

```
      SUBROUTINE PROBSC (NA,NR,NOPEN,IPROB)
      DIMENSION RM(4,4)
      COMMON /CNAG/ NAGE(61)
      COMMON /CINV/ CC(4,4)
      COMMON /CMUL/ A1(4,4),B(4,4),C(4,4)
      COMMON /CPQ/ P(60,4,4)
      COMMON /CRATE/ RATD(60,4),RATM(60,4,4)
      COMMON /CREG/ REG(13)
      COMMON /CRMLA/ RMLA(4,4)
      COMMON /CTIT/ TIT(20)
      DOUBLE PRECISION REG
      INTEGER X
C ------------------------------------------------
C   MATRIX OF OBSERVED RATES   M(X)
C ------------------------------------------------
      DO 100 X=1,NA
      IZ=NAGE(X+1)-NAGE(X)
      IF (X.EQ.NA) IZ=NAGE(X)-NAGE(X-1)
      ZZZ=0.5*FLOAT(IZ)
      DO 5 I=1,NR
      Z=RATD(X,I)
      DO 4 J=1,NR
      IF (I.EQ.J) GO TO 4
      Z=Z+RATM(X,J,I)
    4 CONTINUE
      RM(I,I)=Z
      DO 6 J=1,NR
      IF (J.EQ.I) GO TO 6
      RM(J,I)=-RATM(X,J,I)
    6 CONTINUE
    5 CONTINUE
      IF (X.NE.NA) GO TO 13
      DO 14 I=1,NR
      DO 14 J=1,NR
   14 RMLA(J,I)=RM(J,I)
      IF (NOPEN.NE.2) GO TO 100
   13 CONTINUE
C -------------------------------------------------------
C  PROBABILITY MATRICES
C -------------------------------------------------------
      DO 7 I=1,NR
      DO 7 J=1,NR
      IF (I.EQ.J) CC(J,I)=1.+ZZZ*RM(J,I)
    7 IF (I.NE.J) CC(J,I)=ZZZ*RM(J,I)
      CALL INVERT (NR)
      DO 8 I=1,NR
      DO 8 J=1,NR
      A1(J,I)=CC(J,I)
      IF (J.EQ.I) B(J,I)=1.-ZZZ*RM(J,I)
    8 IF (J.NE.I) B(J,I)=-ZZZ*RM(J,I)
      CALL MULTIP (NR,NR,NR)
      DO 9 I=1,NR
      DO 9 J=1,NR
    9 P(X,J,I)=C(J,I)
  100 CONTINUE
      IF (NOPEN.EQ.2) GO TO 140
      DO 10 I=1,NR
      DO 10 J=1,NR
   10 P(NA,J,I)=0.
  140 CONTINUE
C -------------------------------------------------------
C PRINT PROBABILITIES
C -------------------------------------------------------
 9999 FORMAT (1H1,1X)
      PRINT 9999
      PRINT 1, (TIT(J),J=1,20)
    1 FORMAT (50X,20A4//)
      PRINT 4500
 4500 FORMAT (20X,24HTRANSITION PROBABILITIES/20X,24(1H*)/)
      ISKIP=3
      IF (NA.GT.18) ISKIP=2
      DO 726 I=1,NR
      IF (ISKIP.NE.I) GO TO 121
      PRINT 9999
      IF (NA.LE.18) ISKIP=ISKIP+2
      IF (NA.GT.18) ISKIP=ISKIP+1
  121 CONTINUE
```

```
        PRINT 9001, REG(I)
9001 FORMAT (//20X,6HSTATUS,2X,A8,1X/20X,16(1H*)/)
        PRINT 9011, REG(I)
9011 FORMAT (5X,3HAGE,5X,5HDEATH,5X,15HTRANSITION FROM,1X,A8,1X,2HTO)
        PRINT 9020, (REG(J),J=1,NR)
9020 FORMAT (18X,12(1X,A8))
        PRINT 66
  66 FORMAT (1X)
        DO 726 X=1,NA
        ZZ=0.
        DO 11 J=1,NR
        ZZ=ZZ+P(X,J,I)
  11 CONTINUE
        ZQ=1.-ZZ
        PRINT 9103, NAGE(X),ZQ,(P(X,J,I),J=1,NR)
9103 FORMAT (5X,I3,1X,13F9.6)
 726 CONTINUE
        RETURN
        END




        SUBROUTINE MULTIP (N,K,L)
C    A1 * B = C
C N : NUMBER OF ROWS OF A1
C K : NUMBER OF COLUMNS OF A1 = NUMBER OF ROWS OF B
C L : NUMBER OF COLUMNS OF B
        COMMON /CMUL/ A1(4,4),B(4,4),C(4,4)
        DO 3 I=1,N
        DO 3 J=1,L
        C(I,J)=0.
        DO 3 JJ=1,K
        C(I,J)=C(I,J)+A1(I,JJ)*B(JJ,J)
   3 CONTINUE
        RETURN
        END




        SUBROUTINE INVERT (NR,NRADIX)
C NR : DIMENSION OF MATRIX CC TO BE INVERTED
        DIMENSION PIVOT(4)
        COMMON /CINV/ CC(4,4)
        IF (NRADIX.NE.1) GO TO 605
        DO 2 I=1,NR
   2 CC(I,1)=1./CC(I,1)
        DO 3 I=1,NR
        DO 3 J=1,NR
   3 CC(I,J)=0.
        GO TO 10
 605 CONTINUE
        DO 606 I=1,NR
        PIVOT(I)=CC(I,I)
        CC(I,I)=1.0
        DO 607 J=1,NR
        IF (PIVOT(I).NE.0.) CC(I,J)=CC(I,J)/PIVOT(I)
        IF (PIVOT(I).EQ.0.) CC(I,J)=0.
 607 CONTINUE
        IF (NR.EQ.1) GO TO 10
        DO 608 K=1,NR
        IF (K.EQ.I) GO TO 608
        H=CC(K,I)
        CC(K,I)=0.
        DO 609 L=1,NR
        IF ((CC(I,L).EQ.0.).AND.(H.EQ.0.)) GO TO 609
        CC(K,L)=CC(K,L)-CC(I,L)*H
 609 CONTINUE
 608 CONTINUE
 606 CONTINUE
  10 CONTINUE
        RETURN
        END
```

```
      SUBROUTINE HIST (NA,NR,NRADIX,IHIST)
      DIMENSION HULP(4),RM(4)
      COMMON /CNAG/ NAGE(61)
      COMMON /CCL/ CL(60,4,4)
      COMMON /CMUL/ A1(4,4),B(4,4),C(4,4)
      COMMON /CPQ/ P(60,4,4)
      COMMON /CRAD/ RADIX(4),RADIXT
      COMMON /CREG/ REG(13)
      COMMON /CTIT/ TIT(20)
      DOUBLE PRECISION REG
      REAL L
      INTEGER X,XX
   66 FORMAT (1X)
      IHIST=1
C ----------------------------------------------------------------
C COMPUTE THE NUMBER OF SURVIVORS AT EXACT AGE X
C ----------------------------------------------------------------
      DO 5 I=1,NRADIX
      CL(1,I,I)=1.
      DO 5 J=1,NR
      IF (I.NE.J) CL(1,I,J)=0.
    5 CONTINUE
      NAA=NA-1
      DO 14 X=1,NAA
      XX=X+1
      DO 15 I=1,NR
      DO 15 J=1,NR
      A1(J,I)=P(X,J,I)
   15 B(J,I)=CL(X,I,J)
      CALL MULTIP (NR,NR,NR)
      DO 16 I=1,NR
      DO 16 J=1,NR
   16 CL(XX,I,J)=C(J,I)
   14 CONTINUE
C ----------------------------------------------------------------
C COMPUTE AND PRINT THE LIFE HISTORY OF THE INITIAL COHORT
C ----------------------------------------------------------------
      PRINT 1, (TIT(J),J=1,20)
    1 FORMAT (1H1,50X,20A4)
      PRINT 9201, NAGE(1)
 9201 FORMAT (1H0/20X,30HLIFE HISTORY OF INITIAL COHORT,
     17H OF AGE,I3/20X,40(1H*))
      DO 250 IO=1,NRADIX
      IF (IO.NE.1) PRINT 9211
 9211 FORMAT (1H1,1X)
      PRINT 9202, REG(IO)
 9202 FORMAT (1H0,20X,24HINITIAL STATUS OF COHORT,2X,A8/21X,
     134(1H*)/)
      ISKIP=3
      IF (NA.GT.18) ISKIP=2
      DO 20 I=1,NR
      IF (ISKIP.NE.I) GO TO 29
      PRINT 9211
      IF (NA.LE.18) ISKIP=ISKIP+2
      IF (NA.GT.18) ISKIP=ISKIP+1
   29 CONTINUE
      PRINT 21, I,REG(I)
   21 FORMAT (10X,I2,2H.-,1X,15HSTATUS AT AGE X,2X,A8/)
      PRINT 22
   22 FORMAT (9X,6HDEATHS,5X,14HTRANSITIONS TO)
      PRINT 23, (REG(J),J=1,NR)
   23 FORMAT (1X,3HAGE,11X,12(1X,A8))
      PRINT 66
      CDRT=0.
      DO 6 J=1,NR
    6 HULP(J)=0.
      DO 230 X=1,NA
      ZZ=0.
      DO 119 J=1,NR
  119 ZZ=ZZ+P(X,J,I)
      ZQ=1.-ZZ
      ZZ=CL(X,IO,I)*ZQ
      CDR=ZZ*RADIX(IO)
      CDRT=CDRT+CDR
      DO 24 J=1,NR
      ZZ=CL(X,IO,I)*P(X,J,I)
      RM(J)=ZZ*RADIX(IO)
```

```
 24   HULP(J)=HULP(J)+RM(J)
      PRINT 25, NAGE(X),CDR,(RM(J),J=1,NR)
 25   FORMAT (1X,I3,2X,13F9.0)
230   CONTINUE
      PRINT 26, CDRT,(HULP(J),J=1,NR)
 26   FORMAT (/1X,5HTOTAL,13F9.0)
      PRINT 66
      PRINT 66
 20   CONTINUE
250   CONTINUE
      RETURN
      END
```

```
      SUBROUTINE LIFE (NA,ZFNY,NR,NRADIX,IHIST,ILIF,NOPEN)
      DIMENSION CM(4)
      DIMENSION E(60,4,4),T(4)
      COMMON /CNAG/ NAGE(61)
      COMMON /CCL/ CL(60,4,4)
      COMMON /CINV/ CC(4,4)
      COMMON /CL/ L(60,4,4)
      COMMON /CMUL/ A1(4,4),B(4,4),C(4,4)
      COMMON /CPQ/ P(60,4,4)
      COMMON /CRATE/ RATD(60,4),RATM(60,4,4)
      COMMON /CRAD/ RADIX(4),RADIXT
      COMMON /CREG/ REG(13)
      COMMON /CRMLA/ RMLA(4,4)
      COMMON /CTIT/ TIT(20)
      COMMON /CSU/ SU(60,4,4)
      DOUBLE PRECISION REG
      REAL L
      INTEGER X,XX,XY,XZ1
      ILIF=1
      NAA=NA-1
      IPREX=1
   66 FORMAT (1X)
 9103 FORMAT (1X,I3,1X,F10.5,12F9.5)
 9020 FORMAT (15X,12(1X,A8))
 9001 FORMAT (//20X,6HSTATUS,2X,A8/20X,16(1H*)/)
 9999 FORMAT (1H1//1X)
 9011 FORMAT (1X,3HAGE,6X,5HDEATH,5X,15HTRANSITION FROM,1X,A8,1X,2HTO)
C ----------------------------------------------------
C EXPECTED NUMBER OF SURVIVORS AT EXACT AGE X
C ----------------------------------------------------
C COMPUTE NUMBER OF SURVIVORS
C
      NA4=NAA
      IF (NOPEN.EQ.2) NA4=NA
      NA5=NA4+1
C
      IF (IHIST.NE.0) GO TO 5
      DO 76 I=1,NRADIX
      CL(1,I,I)=1.
      DO 76 J=1,NR
      IF (I.NE.J) CL(1,I,J)=0.
   76 CONTINUE
      DO 77 X=1,NA4
      XX=X+1
      DO 6 I=1,NR
      DO 6 J=1,NR
      A1(J,I)=P(X,J,I)
    6 B(J,I)=CL(X,I,J)
      CALL MULTIP (NR,NR,NRADIX)
      DO 7 I=1,NRADIX
      DO 7 J=1,NR
    7 CL(XX,I,J)=C(J,I)
   77 CONTINUE
    5 CONTINUE
C PRINT NUMBER OF SURVIVORS
      PRINT 1, (TIT(J),J=1,20)
    1 FORMAT (1H1,50X,20A4)
      PRINT 66
      PRINT 66
      PRINT 4831
 4831 FORMAT (20X,51HEXPECTED NUMBER OF SURVIVORS AT EXACT AGE X IN EACH
     17H STATUS,/20X,58(1H*))
      ISKIP=3
      DO 60 IO=1,NRADIX
      IF (ISKIP.NE.IO) GO TO 123
      PRINT 9999
      ISKIP=ISKIP+2
  123 CONTINUE
      PRINT 9502,REG(IO)
 9502 FORMAT (//1X,3HAGE,6X,24HINITIAL STATUS OF COHORT,2X,A8/1X,
     13(1H*),6X,34(1H*)/)
      PRINT 9100, (REG(J),J=1,NR)
 9100 FORMAT (10X,5HTOTAL,10(1X,A8))
      PRINT 66
```

```
C
      DO 60 X=1,NA
      CLT=0.
      DO 8 J=1,NR
      CM(J)=CL(X,IO,J)*RADIX(IO)
    8 CLT=CLT+CM(J)
      PRINT 9101, NAGE(X),CLT,(CM(J),J=1,NR)
 9101 FORMAT (1X,I3,1X,F10.0,12F9.0)
   60 CONTINUE
C ------------------------------------------------------------
C NUMBER OF YEARS LIVED BETWEEN X AND X+NY
C ------------------------------------------------------------
C            - BY STATUS AT AGE NASS
C ------------------------------------------------------------
      DO 10 IO=1,NRADIX
      DO 10 X=1,NA4
      IZ=NAGE(X+1)-NAGE(X)
      IF (X.EQ.NA) IZ=NAGE(X)-NAGE(X-1)
      ZZ=0.5*FLOAT(IZ)
      XX=X+1
      DO 9 I=1,NR
    9 L(X,IO,I)=ZZ*(CL(X,IO,I)+CL(XX,IO,I))
   10 CONTINUE
   18 CONTINUE
C
C
      IF (NOPEN.EQ.2) GO TO 120
C NUMBER OF YEARS LIVED IN LAST AGE GROUP
      DO 2 I=1,NR
      DO 2 J=1,NR
    2 CC(J,I)=RMLA(J,I)
      CALL INVERT (NR)
      DO 3 I=1,NR
      DO 3 J=1,NR
      A1(J,I)=CC(J,I)
    3 B(J,I)=CL(NA,I,J)
      CALL MULTIP (NR,NR,NR)
      DO 4 I=1,NR
      DO 4 J=1,NR
    4 L(NA,I,J)=C(J,I)
  120 CONTINUE
   50 CONTINUE
      PRINT 9999
      PRINT 4832
 4832 FORMAT (10X,39HNUMBER OF YEARS LIVED IN EACH STATUS BY
     1,14H A UNIT COHORT/10X,53(1H*))
      ISKIP=3
      DO 34 IO=1,NRADIX
      IF (IO.NE.ISKIP) GO TO 124
      PRINT 9999
      ISKIP=ISKIP+2
  124 CONTINUE
      PRINT 9502, REG(IO)
      PRINT 9100, (REG(J),J=1,NR)
      PRINT 66
      DO 58 X=1,NA
      CLLT=0.
      DO 11 J=1,NR
   11 CLLT=CLLT+L(X,IO,J)
      PRINT 9103, NAGE(X),CLLT,(L(X,IO,J),J=1,NR)
   58 CONTINUE
   34 CONTINUE
```

```
C  -----------------------------------------------
C            - BY STATUS AT AGE X
C  -----------------------------------------------
      PRINT 9999
      PRINT 80
 80   FORMAT (10X,39HNUMBER OF YEARS LIVED IN EACH STATUS BY
     1,16H PERSON OF AGE X/10X,55(1H*))
      ISKIP=3
      DO 85 I=1,NRADIX
      IF (I.NE.ISKIP) GO TO 82
      PRINT 9999
      ISKIP=ISKIP+2
 82   CONTINUE
      PRINT 83, REG(I)
 83   FORMAT (//1X,3HAGE,6X,15HSTATUS AT AGE X,
     12X,A8/1X,3(1H*),6X,25(1H*)/)
      PRINT 9100, (REG(J),J=1,NR)
      PRINT 66
      DO 81 X=1,NA
      IZ=NAGE(X+1)-NAGE(X)
      IF (X.EQ.NA) IZ=NAGE(X)-NAGE(X-1)
      ZFNY2=0.5*FLOAT(IZ)
      CMT=0.
      DO 84 J=1,NR
      IF (I.EQ.J) CM(J)=ZFNY2*(1.+P(X,J,I))
      IF (I.NE.J) CM(J)=ZFNY2*P(X,J,I)
      IF (X.EQ.NA) CM(J)=CC(J,I)
      CMT=CMT+CM(J)
 84   CONTINUE
      PRINT 9103, NAGE(X),CMT,(CM(J),J=1,NR)
 81   CONTINUE
 85   CONTINUE
C
      IF (NRADIX.LT.NR) GO TO 534
C  -----------------------------------------------
C SURVIVORSHIP PROPORTIONS
C  -----------------------------------------------
      DO 61 X=1,NAA
      XX=X+1
      DO 74 IO=1,NRADIX
      DO 74 J=1,NR
 74   CC(IO,J)=L(X,IO,J)
      CALL INVERT (NR)
      DO 75 IO=1,NRADIX
      DO 75 J=1,NR
      SU(X,IO,J)=0.
      DO 75 JJ=1,NR
      SU(X,IO,J)=SU(X,IO,J)+CC(IO,JJ)*L(XX,JJ,J)
 75   CONTINUE
 61   CONTINUE
      PRINT 9999
      PRINT 4834
 4834 FORMAT (30X,24HSURVIVORSHIP PROPORTIONS/30X,24(1H*))
      ISKIP=3
      DO 64 I=1,NRADIX
      IF (ISKIP.NE.I) GO TO 125
      PRINT 9999
      ISKIP=ISKIP+2
 125  CONTINUE
      PRINT 9001, REG(I)
      PRINT 9100, (REG(J),J=1,NR)
      NAA=NA-1
      PRINT 66
      DO 63 X=1,NAA
      SSU=0.
      DO 62 J=1,NR
 62   SSU=SSU+SU(X,I,J)
 63   PRINT 9103, NAGE(X),SSU,(SU(X,I,J),J=1,NR)
 64   CONTINUE
C
 534  CONTINUE
```

```
C
C  -----------------------------------------------------------
C  NUMBER OF YEARS LIVED BEYOND AGE X AND LIFE EXPECTANCY BY
C     STATUS AT AGE X
C  -----------------------------------------------------------
      PRINT 9999
      PRINT 4835
 4835 FORMAT (10X,40HTOTAL NUMBER OF YEARS LIVED BEYOND AGE X/
     110X,40(1H*))
      ISKIP=3
      DO 51 IO=1,NRADIX
      IF (ISKIP.NE.IO) GO TO 126
        PRINT 9999
        ISKIP=ISKIP+2
 126  CONTINUE
      PRINT 9502, REG(IO)
      PRINT 9100, (REG(J),J=1,NR)
      PRINT 66
      DO 14 X=1,NA
      TT=0.
      DO 17 I=1,NR
      T(I)=0.
      DO 12 XY=X,NA
 12   T(I)=T(I)+L(XY,IO,I)
 17   TT=TT+T(I)
      PRINT 9103, NAGE(X),TT,(T(J),J=1,NR)
      CLT=0.
      DO 333 J=1,NR
 333  CLT=CLT+CL(X,IO,J)
      DO 13 J=1,NR
      E(X,IO,J)=0.
      IF (CLT.EQ.0.) GO TO 13
      E(X,IO,J)=T(J)/CLT
 13   CONTINUE
 14   CONTINUE
 51   CONTINUE
C  PRINT LIFE EXPECTANCY
      PRINT 9999
      PRINT 4830, NAGE(1)
 4830 FORMAT (30X,37HEXPECTATIONS OF LIFE BY STATUS AT AGE ,
     1I3/30X,40(1H*))
 876  ISKIP=3
      DO 65 IO=1,NRADIX
       IF (ISKIP.NE.IO) GO TO 127
        PRINT 9999
       ISKIP=ISKIP+2
 127 CONTINUE
      IF (IPREX.EQ.1) PRINT 9502, REG(IO)
      IF (IPREX.EQ.25) PRINT 83, REG(IO)
      PRINT 9100, (REG(J),J=1,NR)
      PRINT 66
      DO 65 X=1,NA
      EE=0.
      DO 15 J=1,NR
 15   EE=EE+E(X,IO,J)
      PRINT 9103, NAGE(X),EE,(E(X,IO,J),J=1,NR)
 65   CONTINUE
      IF (IPREX.EQ.25) GO TO 877
```

```
C ----------------------------------------------------
C LIFE EXPECTANCY BY STATUS AT AGE X
C ----------------------------------------------------
      IF (NRADIX.NE.NR) RETURN
C
      PRINT 9999
      PRINT 56
   56 FORMAT (30X,39HEXPECTATIONS OF LIFE BY STATUS AT AGE X/
     130X,39(1H*))
      DO 49 I=1,NR
      DO 49 J=1,NR
   49 A1(J,I)=0.
      NA1=NA+1
      DO 57 IX=1,NA
      X=NA1-IX
      DO 52 I=1,NR
      DO 52 J=1,NR
   52 CC(J,I)=CL(X,I,J)
      CALL INVERT (NR)
      DO 54 I=1,NR
      DO 54 J=1,NR
      A1(J,I)=A1(J,I)+L(X,I,J)
   54 B(J,I)=CC(J,I)
      CALL MULTIP (NR,NR,NR)
      DO 55 I=1,NR
      DO 55 J=1,NR
   55 E(X,I,J)=C(J,I)
   57 CONTINUE
      IPREX=25
      GO TO 876
  877 CONTINUE
      RETURN
      END
```

```
      SUBROUTINE TAB (NA,NR,NRADIX)
C
C THIS PROGRAM PRINTS THE SUMMARY TABLES
C
      DIMENSION HU(60),HUP(2,2),HUL(2)
      DIMENSION ZEX(2),HUT(2)
      COMMON /CNAG/ NAGE(61)
      COMMON /CCL/ CL(60,4,4)
      COMMON /CL/ L(60,4,4)
      COMMON /CPQ/ P(60,4,4)
      COMMON /CRATE/ RATD(60,4),RATM(60,4,4)
      COMMON /CRAD/ RADIX(4),RADIXT
      COMMON /CREG/ REG(13)
      COMMON /CTIT/ TIT(20)
      DOUBLE PRECISION REG
      REAL L
       INTEGER X
      WRITE (7,4) (TIT(J),J=1,20)
    4 FORMAT (1H1,50X,20A4)
      WRITE (7,12)
   12 FORMAT (1H0,16X,18HAGE-SPECIFIC RATES,14X,
     124HTRANSITION PROBABILITIES/11X,30(1H-),2X,40(1H-))
      WRITE (7,64)
   64 FORMAT (1X)
      WRITE (7,13)
   13 FORMAT (5X,3HAGE,3X,9HMORTALITY,4X,6H1 TO 2,4X,6H2 TO 1,
     16X,6H1 TO 1,4X,6H1 TO 2,4X,6H2 TO 1,4X,6H2 TO 2/)
      DO 15 X=1,NA
   15 WRITE (7,14) NAGE(X),RATD(X,1),RATM(X,2,1),RATM(X,1,2)
     1,((P(X,I,J),I=1,NR),J=1,NR)
   14 FORMAT (5X,I3,2X,3F10.6,2X,4F10.6)
      IF (NRADIX.EQ.1) WRITE (7,33)
   33 FORMAT (1H1,30X,38HPOPULATION-BASED LIFE-TABLE STATISTICS/
     131X,38(1H*))
      IF (NRADIX.EQ.NR) WRITE (7,34) NAGE(1)
   34 FORMAT (1H1,30X,34HSTATUS-BASED LIFE TABLE STATISTICS,
     118H (BY STATUS AT AGE,I3,1X,1H) /31X,57(1H*))
C
      DO 500 IO=1,NRADIX
C
      IF (IO.NE.1) WRITE (7,66)
   66 FORMAT (1H1,1X)
      WRITE (7,17)
   17 FORMAT (1H0,10X,30HLIFE HISTORY OF INITIAL COHORT )
      IF (NRADIX.EQ.1) WRITE (7,37)
   37 FORMAT (11X,30(1H-))
      IF (NRADIX.EQ.NR) WRITE (7,38), REG(IO)
   38 FORMAT (11X,10(1H-),1X,A8,1X,10(1H-))
      WRITE (7,64)
      WRITE (7,16)
   16 FORMAT (16X,6HDEATHS,22X,11HTRANSITIONS,20X,
     131HNUMBER OF PEOPLE AT EXACT AGE X/10X,
     120(1H-),2X,40(1H-),2X,32(1H-)/)
      WRITE (7,18) (REG(J),J=1,NR),(REG(J),J=1,NR)
   18 FORMAT (5X,3HAGE,4X,A8,2X,A8,6X,6H1 TO 1,4X,6H2 TO 1,
     14X,6H1 TO 2,4X,6H2 TO 2,4X,A8,2X,A8,7X,5HTOTAL/)
      DO 19 X=1,NA
      HU(X)=0.
      PMIG=0.
      DO 3 J=1,2
```

```
      HU(X)=HU(X)+CL(X,IO,J)*RADIX(IO)
   3  PMIG=PMIG+P(X,J,1)
      DO 20 I=1,2
      HUL(I)=CL(X,IO,I)*(1.-PMIG)*RADIX(IO)
      HUT(I)=CL(X,IO,I)*RADIX(IO)
      DO 20 J=1,2
  20  HUP(J,I)=CL(X,IO,I)*P(X,J,I)*RADIX(IO)
      HUTT=HU(X)
  19  WRITE (7,21) NAGE(X),(HUL(J),J=1,2),((HUP(J,I),I=1,2),
     1J=1,2),(HUT(J),J=1,2),HUTT
  21  FORMAT (5X,I3,2X,2F10.0,2X,4F10.0,2X,2F10.0,
     12X,F10.0)
      WRITE (7,23)
  23  FORMAT (1H1,10X,30HEXPECTED NUMBER OF YEARS LIVED,
     128H BY MEMBER OF INITIAL COHORT/11X,58(1H-)/)
      WRITE (7,24)
  24  FORMAT (11X,28HWITHIN AGE INTERVAL X TO X+1,6X,
     124HLIFE EXPECTANCY AT AGE X/)
      WRITE (7,25) (REG(J),J=1,NR),(REG(J),J=1,NR)
  25  FORMAT (5X,3HAGE,2(4X,A8,2X,A8,5X,5HTOTAL)/)
      DO 27 X=1,NA
      CLLT=0.
      ZEXT=0.
      HU(X)=HU(X)/RADIX(IO)
      DO 30 J=1,NR
      ZEX(J)=0.
      IF (HU(X).EQ.0.) GO TO 30
      TT=0.
      DO 32 IX=X,NA
  32  TT=TT+L(IX,IO,J)
      ZEX(J)=TT/HU(X)
      ZEXT=ZEXT+ZEX(J)
      CLLT=CLLT+L(X,IO,J)
  30  CONTINUE
  27  WRITE (7,26) NAGE(X),(L(X,IO,J),J=1,2),CLLT,
     1(ZEX(J),J=1,2),ZEXT
  26  FORMAT (5X,I3,2(2X,3F10.6))
 550  CONTINUE
 500  CONTINUE
      RETURN
      END
```

5. ILLUSTRATION: TWO-STATE WORKING LIFE TABLE AND FOUR-STATE MARITAL STATUS LIFE TABLE

To illustrate the use of LIFEINDEC, the input data and the output are listed for a four-state marital status life table, and a two-state working life table. Population-based and status-based life-table statistics are given.

Table 2 presents the input file for a population-based marital status life table. That the data are for a population-based table can be seen from the values of NASS (= NAS) and NRADX (= 1 ≠ NR). To produce the status-based life table statistics, we have set NASS equal to 20 and NRADX equal to NR. In addition cohorts were specified for all four states. Life histories for other ages may easily be produced by changing the value of NASS. The age structure of the marital status table is irregular (NY = 99). The output of the computer program is given in Table 3.

The data file for the working life table is contained in Table 4. As can be seen from the parameter specification, the data are for a status-based life table NASS = 17 > NAS; NRADX = NR). The data consist of occurrence/exposure rates. The output is shown in Table 5. The complete computer output is not given, only the summary tables. Note that the status-based life table statistics in Table 5C refer to the *status at age x*. Hence, the expected number of years in Table 5C4 refers to status at age x.*

For a discussion of the output of the marital status life table, the interested reader is referred to Willekens et al. (1979). The working life table results are discussed in Hoem and Fong (1976) and Willekens (1979).

---

*To calculate the *life history* of people at any other age, it suffices to replace 17, i.e., the value of NASS, by the desired age. The life histories of 20-, 30- or 64-year olds can therefore easily be computed. Table 5C4 will of course be the same for any initial cohort selected.

Table 2. Input file for marital status life tables
          (4 states, Belgium, females, 1971).

```
nev.mar.pres mar widoweddivorced belgium
100000.
  67894.   279596.   385561.   377994.   332277.    46289.    35327.
  26778.    19108.    14292.     9612.     7830.     6300.     5023.
   4172.    21244.    20748.    23001.    25347.    18268.    23135.
  24518.    23931.    20650.    15968.    10039.     5887.
   1212.      215.      130.      109.      147.       31.      23.      24.      18.
     12.       13.       10.        7.        6.        8.      42.      55.      90.
    128.      120.      234.      361.      538.      765.    1032.    1122.    1242.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.       10.    17891.    10342.   10893.    8756.    6445.
   4206.     2599.     1518.     1011.      675.      490.    1405.     649.     373.
    283.      143.       76.       41.       29.       12.       9.       1.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        7.    24318.   23560.   33955.
  44529.    51672.    56571.    51560.    52668.    51617.   45915.
  43060.   263721.   281590.   285755.   280340.   185482.  209661.
 187421.   143978.    87368.    40970.    13430.     3362.
      0.        0.        0.        0.       14.        8.      20.      16.      21.
     22.       25.       23.       30.       24.       25.     203.     331.     520.
    834.      851.     1527.     2266.     2941.     3116.    2534.    1455.     633.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
     40.       49.       54.       54.       46.       52.     308.     495.     853.
   1465.     1683.     3453.     5329.     6944.     6764.    5195.    3096.    1559.
      0.        0.        0.        0.       24.       39.      81.     129.     218.
    288.      339.      336.      324.      285.      253.    1403.    1147.     821.
    531.      248.      143.       73.       31.        8.       6.       0.       0.
      0.        0.        0.        0.       89.       60.      82.
    113.      148.      172.      218.      256.      277.     263.
    276.     2389.     4490.     9095.    17153.    21536.   43278.
  69146.    96224.   106598.    89846.    59261.    36874.
      0.        0.        0.        0.        1.        0.       0.       1.       1.
      2.        2.        2.        1.        2.        1.       5.      16.      32.
     86.      140.      395.     1001.     2302.     4381.    6377.    7108.    8142.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.      .0.
      0.        0.        0.        0.        4.        6.       9.      12.      13.
     22.       25.       24.       24.       19.       16.     130.     158.     215.
    249.      213.      231.      190.      138.       57.      16.       5.       2.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.       44.       39.      92.
    166.      353.      491.      531.      667.      796.     761.
    780.     5581.     6744.     7426.     7698.     5019.    5710.
   5310.     4103.     2757.     1551.      859.      457.
      0.        0.        0.        0.        0.        0.       0.       1.       2.
      0.        1.        1.        3.        2.        2.      11.      19.      31.
     35.       42.       58.       83.      113.      149.     126.     119.     112.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.      ,0.        0.       0.       0.       0.
     95.      132.      151.      142.      146.      152.     777.     717.     527.
    409.      211.      141.       76.       32.        9.       6.       1.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
      0.        0.        0.        0.        0.        0.       0.       0.       0.
end
```

Table 3. Marital status life table, Belgium, female, 1971.
3A. Observed population characteristics.

A1. Populations, deaths, and transitions: absolute numbers.

status   nev.mar.

age	population	births	deaths	transition from nev.mar. to nev.mar.	pres mar	widowed	divorced
0	67894.	0.	1212.	0.	0.	0.	0.
1	279596.	0.	215.	0.	0.	0.	0.
5	385561.	0.	130.	0.	0.	0.	0.
10	377994.	0.	109.	0.	10.	0.	0.
15	332277.	0.	147.	0.	17891.	0.	0.
20	46289.	0.	31.	0.	10342.	0.	0.
21	35327.	0.	23.	0.	10893.	0.	0.
22	26778.	0.	24.	0.	8756.	0.	0.
23	19108.	0.	18.	0.	6445.	0.	0.
24	14292.	0.	12.	0.	4206.	0.	0.
25	9612.	0.	13.	0.	2599.	0.	0.
26	7830.	0.	10.	0.	1518.	0.	0.
27	6300.	0.	7.	0.	1011.	0.	0.
28	5023.	0.	6.	0.	675.	0.	0.
29	4172.	0.	8.	0.	490.	0.	0.
30	21244.	0.	42.	0.	1405.	0.	0.
35	20748.	0.	55.	0.	649.	0.	0.
40	23001.	0.	90.	0.	373.	0.	0.
45	25347.	0.	128.	0.	283.	0.	0.
50	18268.	0.	120.	0.	143.	0.	0.
55	23135.	0.	234.	0.	76.	0.	0.
60	24518.	0.	361.	0.	41.	0.	0.
65	23931.	0.	538.	0.	29.	0.	0.
70	20650.	0.	765.	0.	12.	0.	0.
75	15968.	0.	1032.	0.	9.	0.	0.
80	10039.	0.	1122.	0.	1.	0.	0.
85	5887.	0.	1242.	0.	0.	0.	0.
total	1850789.	0.	7694.	0.	67857.	0.	0.

status   pres mar

age	population	births	deaths	transition from pres mar to nev.mar.	pres mar	widowed	divorced
0	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.
10	7.	0.	0.	0.	0.	0.	0.
15	24318.	0.	14.	0.	0.	6.	24.
20	23560.	0.	8.	0.	0.	7.	39.
21	33955.	0.	20.	0.	0.	18.	81.
22	44529.	0.	16.	0.	0.	26.	129.
23	51672.	0.	21.	0.	0.	31.	218.
24	56571.	0.	22.	0.	0.	40.	288.
25	51560.	0.	25.	0.	0.	49.	339.
26	52668.	0.	23.	0.	0.	54.	336.
27	51617.	0.	30.	0.	0.	54.	324.
28	45915.	0.	24.	0.	0.	46.	285.
29	43060.	0.	25.	0.	0.	52.	253.
30	263721.	0.	203.	0.	0.	308.	1403.
35	281590.	0.	331.	0.	0.	495.	1147.
40	285755.	0.	520.	0.	0.	853.	821.
45	280340.	0.	834.	0.	0.	1465.	531.
50	185482.	0.	851.	0.	0.	1683.	248.
55	209661.	0.	1527.	0.	0.	3453.	143.
60	187421.	0.	2266.	0.	0.	5329.	73.
65	143978.	0.	2941.	0.	0.	6944.	31.
70	87368.	0.	3116.	0.	0.	6764.	8.
75	40970.	0.	2534.	0.	0.	5195.	6.
80	13430.	0.	1455.	0.	0.	3096.	0.
85	3362.	0.	633.	0.	0.	1559.	0.
total	2462510.	0.	17439.	0.	0.	37527.	6727.

status   widowed
----

age	population	births	deaths	transition from widowed to			
				nev.mar.	pres mar	widowed	divorced
0	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.
15	89.	0.	1.	0.	4.	0.	0.
20	60.	0.	0.	0.	6.	0.	0.
21	82.	0.	0.	0.	9.	0.	0.
22	113.	0.	1.	0.	12.	0.	0.
23	148.	0.	1.	0.	13.	0.	0.
24	172.	0.	2.	0.	22.	0.	0.
25	218.	0.	2.	0.	25.	0.	0.
26	256.	0.	2.	0.	24.	0.	0.
27	277.	0.	1.	0.	24.	0.	0.
28	263.	0.	2.	0.	19.	0.	0.
29	276.	0.	1.	0.	16.	0.	0.
30	2389.	0.	5.	0.	130.	0.	0.
35	4490.	0.	16.	0.	158.	0.	0.
40	9095.	0.	32.	0.	215.	0.	0.
45	17153.	0.	86.	0.	249.	0.	0.
50	21536.	0.	140.	0.	213.	0.	0.
55	43278.	0.	395.	0.	231.	0.	0.
60	69146.	0.	1001.	0.	190.	0.	0.
65	96224.	0.	2302.	0.	138.	0.	0.
70	106598.	0.	4381.	0.	57.	0.	0.
75	89846.	0.	6377.	0.	16.	0.	0.
80	59261.	0.	7108.	0.	5.	0.	0.
85	36874.	0.	8142.	0.	2.	0.	0.
total	557844.	0.	29998.	0.	1778.	0.	0.

status   divorced
----

age	population	births	deaths	transition from divorced to			
				nev.mar.	pres mar	widowed	divorced
0	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.
15	44.	0.	0.	0.	3.	0.	0.
20	39.	0.	0.	0.	8.	0.	0.
21	92.	0.	0.	0.	16.	0.	0.
22	166.	0.	1.	0.	47.	0.	0.
23	353.	0.	2.	0.	76.	0.	0.
24	491.	0.	0.	0.	95.	0.	0.
25	531.	0.	1.	0.	132.	0.	0.
26	667.	0.	1.	0.	151.	0.	0.
27	796.	0.	3.	0.	142.	0.	0.
28	761.	0.	2.	0.	146.	0.	0.
29	780.	0.	2.	0.	152.	0.	0.
30	5581.	0.	11.	0.	777.	0.	0.
35	6744.	0.	19.	0.	717.	0.	0.
40	7426.	0.	31.	0.	527.	0.	0.
45	7698.	0.	35.	0.	409.	0.	0.
50	5019.	0.	42.	0.	211.	0.	0.
55	5710.	0.	58.	0.	141.	0.	0.
60	5310.	0.	83.	0.	76.	0.	0.
65	4103.	0.	113.	0.	32.	0.	0.
70	2757.	0.	149.	0.	9.	0.	0.
75	1551.	0.	126.	0.	6.	0.	0.
80	859.	0.	119.	0.	1.	0.	0.
85	457.	0.	112.	0.	0.	0.	0.
total	57935.	0.	910.	0.	3874.	0.	0.

A2. Populations, deaths, and transitions: percentage distribution.

status   nev.mar.
_____

age	population	births	deaths	nev.mar.	pres mar	widowed	divorced
				transition from nev.mar. to			
0	3.6684	0.0000	15.7525	0.0000	0.0000	0.0000	0.0000
1	15.1069	0.0000	2.7944	0.0000	0.0000	0.0000	0.0000
5	20.8323	0.0000	1.6896	0.0000	0.0000	0.0000	0.0000
10	20.4234	0.0000	1.4167	0.0000	0.0147	0.0000	0.0000
15	17.9533	0.0000	1.9106	0.0000	26.3657	0.0000	0.0000
20	2.5010	0.0000	0.4029	0.0000	15.2409	0.0000	0.0000
21	1.9088	0.0000	0.2989	0.0000	16.0529	0.0000	0.0000
22	1.4468	0.0000	0.3119	0.0000	12.9036	0.0000	0.0000
23	1.0324	0.0000	0.2339	0.0000	9.4979	0.0000	0.0000
24	0.7722	0.0000	0.1560	0.0000	6.1983	0.0000	0.0000
25	0.5193	0.0000	0.1690	0.0000	3.8301	0.0000	0.0000
26	0.4231	0.0000	0.1300	0.0000	2.2371	0.0000	0.0000
27	0.3404	0.0000	0.0910	0.0000	1.4899	0.0000	0.0000
28	0.2714	0.0000	0.0780	0.0000	0.9947	0.0000	0.0000
29	0.2254	0.0000	0.1040	0.0000	0.7221	0.0000	0.0000
30	1.1478	0.0000	0.5459	0.0000	2.0705	0.0000	0.0000
35	1.1210	0.0000	0.7148	0.0000	0.9564	0.0000	0.0000
40	1.2428	0.0000	1.1697	0.0000	0.5497	0.0000	0.0000
45	1.3695	0.0000	1.6636	0.0000	0.4171	0.0000	0.0000
50	0.9870	0.0000	1.5597	0.0000	0.2107	0.0000	0.0000
55	1.2500	0.0000	3.0413	0.0000	0.1120	0.0000	0.0000
60	1.3247	0.0000	4.6920	0.0000	0.0604	0.0000	0.0000
65	1.2930	0.0000	6.9925	0.0000	0.0427	0.0000	0.0000
70	1.1157	0.0000	9.9428	0.0000	0.0177	0.0000	0.0000
75	0.8628	0.0000	13.4130	0.0000	0.0133	0.0000	0.0000
80	0.5424	0.0000	14.5828	0.0000	0.0015	0.0000	0.0000
85	0.3181	0.0000	16.1424	0.0000	0.0000	0.0000	0.0000
total	100.0000	0.0000	100.0000	0.0000	100.0000	0.0000	0.0000
m.age	17.0044	0.0000	56.9784	0.0000	22.0505	0.0000	0.0000

status   pres mar
_____

age	population	births	deaths	nev.mar.	pres mar	widowed	divorced
				transition from pres mar to			
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.9875	0.0000	0.0803	0.0000	0.0000	0.0160	0.3568
20	0.9567	0.0000	0.0459	0.0000	0.0000	0.0187	0.5798
21	1.3789	0.0000	0.1147	0.0000	0.0000	0.0480	1.2041
22	1.8083	0.0000	0.0917	0.0000	0.0000	0.0693	1.9176
23	2.0983	0.0000	0.1204	0.0000	0.0000	0.0826	3.2407
24	2.2973	0.0000	0.1262	0.0000	0.0000	0.1066	4.2813
25	2.0938	0.0000	0.1434	0.0000	0.0000	0.1306	5.0394
26	2.1388	0.0000	0.1319	0.0000	0.0000	0.1439	4.9948
27	2.0961	0.0000	0.1720	0.0000	0.0000	0.1439	4.8164
28	1.8646	0.0000	0.1376	0.0000	0.0000	0.1226	4.2367
29	1.7486	0.0000	0.1434	0.0000	0.0000	0.1386	3.7610
30	10.7094	0.0000	1.1641	0.0000	0.0000	0.8207	20.8563
35	11.4351	0.0000	1.8980	0.0000	0.0000	1.3191	17.0507
40	11.6042	0.0000	2.9818	0.0000	0.0000	2.2730	12.2045
45	11.3843	0.0000	4.7824	0.0000	0.0000	3.9039	7.8936
50	7.5322	0.0000	4.8799	0.0000	0.0000	4.4848	3.6866
55	8.5141	0.0000	8.7562	0.0000	0.0000	9.2014	2.1258
60	7.6110	0.0000	12.9939	0.0000	0.0000	14.2004	1.0852
65	5.8468	0.0000	16.8645	0.0000	0.0000	18.5040	0.4608
70	3.5479	0.0000	17.8680	0.0000	0.0000	18.0244	0.1189
75	1.6637	0.0000	14.5307	0.0000	0.0000	13.8434	0.0892
80	0.5454	0.0000	8.3434	0.0000	0.0000	8.2501	0.0000
85	0.1365	0.0000	3.6298	0.0000	0.0000	4.1543	0.0000
total	100.0000	0.0000	100.0000	0.0000	0.0000	100.0000	100.0000
m.age	44.9452	0.0000	66.3336	0.0000	0.0000	67.0950	35.3433

status   widowed

| age | population | births | deaths | transition from widowed to |
				nev.mar.	pres mar	widowed	divorced
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0160	0.0000	0.0033	0.0000	0.2250	0.0000	0.0000
20	0.0108	0.0000	0.0000	0.0000	0.3375	0.0000	0.0000
21	0.0147	0.0000	0.0000	0.0000	0.5062	0.0000	0.0000
22	0.0203	0.0000	0.0033	0.0000	0.6749	0.0000	0.0000
23	0.0265	0.0000	0.0033	0.0000	0.7312	0.0000	0.0000
24	0.0308	0.0000	0.0067	0.0000	1.2373	0.0000	0.0000
25	0.0391	0.0000	0.0067	0.0000	1.4061	0.0000	0.0000
26	0.0459	0.0000	0.0067	0.0000	1.3498	0.0000	0.0000
27	0.0497	0.0000	0.0033	0.0000	1.3498	0.0000	0.0000
28	0.0471	0.0000	0.0067	0.0000	1.0686	0.0000	0.0000
29	0.0495	0.0000	0.0033	0.0000	0.8999	0.0000	0.0000
30	0.4283	0.0000	0.0167	0.0000	7.3116	0.0000	0.0000
35	0.8049	0.0000	0.0533	0.0000	8.8864	0.0000	0.0000
40	1.6304	0.0000	0.1067	0.0000	12.0922	0.0000	0.0000
45	3.0749	0.0000	0.2867	0.0000	14.0045	0.0000	0.0000
50	3.8606	0.0000	0.4667	0.0000	11.9798	0.0000	0.0000
55	7.7581	0.0000	1.3168	0.0000	12.9921	0.0000	0.0000
60	12.3952	0.0000	3.3369	0.0000	10.6862	0.0000	0.0000
65	17.2493	0.0000	7.6738	0.0000	7.7615	0.0000	0.0000
70	19.1089	0.0000	14.6043	0.0000	3.2058	0.0000	0.0000
75	16.1059	0.0000	21.2581	0.0000	0.8999	0.0000	0.0000
80	10.6232	0.0000	23.6949	0.0000	0.2812	0.0000	0.0000
85	6.6101	0.0000	27.1418	0.0000	0.1125	0.0000	0.0000
total	100.0000	0.0000	100.0000	0.0000	100.0000	0.0000	0.0000
m.age	69.4468	0.0000	78.8460	0.0000	49.0315	0.0000	0.0000

status   divorced

| age | population | births | deaths | transition from divorced to |
				nev.mar.	pres mar	widowed	divorced
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0759	0.0000	0.0000	0.0000	0.0774	0.0000	0.0000
20	0.0673	0.0000	0.0000	0.0000	0.2065	0.0000	0.0000
21	0.1588	0.0000	0.0000	0.0000	0.4130	0.0000	0.0000
22	0.2865	0.0000	0.1099	0.0000	1.2132	0.0000	0.0000
23	0.6093	0.0000	0.2198	0.0000	1.9618	0.0000	0.0000
24	0.8475	0.0000	0.0000	0.0000	2.4522	0.0000	0.0000
25	0.9165	0.0000	0.1099	0.0000	3.4073	0.0000	0.0000
26	1.1513	0.0000	0.1099	0.0000	3.8978	0.0000	0.0000
27	1.3740	0.0000	0.3297	0.0000	3.6655	0.0000	0.0000
28	1.3135	0.0000	0.2198	0.0000	3.7687	0.0000	0.0000
29	1.3463	0.0000	0.2198	0.0000	3.9236	0.0000	0.0000
30	9.6332	0.0000	1.2088	0.0000	20.0568	0.0000	0.0000
35	11.6406	0.0000	2.0879	0.0000	18.5080	0.0000	0.0000
40	12.8178	0.0000	3.4066	0.0000	13.6035	0.0000	0.0000
45	13.2873	0.0000	3.8462	0.0000	10.5576	0.0000	0.0000
50	8.6632	0.0000	4.6154	0.0000	5.4466	0.0000	0.0000
55	9.8559	0.0000	6.3736	0.0000	3.6396	0.0000	0.0000
60	9.1654	0.0000	9.1209	0.0000	1.9613	0.0000	0.0000
65	7.0821	0.0000	12.4176	0.0000	0.8260	0.0000	0.0000
70	4.7588	0.0000	16.3736	0.0000	0.2323	0.0000	0.0000
75	2.6771	0.0000	13.8462	0.0000	0.1549	0.0000	0.0000
80	1.4827	0.0000	13.0769	0.0000	0.0258	0.0000	0.0000
85	0.7888	0.0000	12.3077	0.0000	0.0000	0.0000	0.0000
total	100.0000	0.0000	100.0000	0.0000	100.0000	0.0000	0.0000
m.age	49.5822	0.0000	69.1319	0.0000	37.9218	0.0000	0.0000

A3. Observed occurrence/exposure rates.

death rates
****

age	nev.mar.	pres mar	widowed	divorced
0	0.017851	0.000000	0.000000	0.000000
1	0.000769	0.000000	0.000000	0.000000
5	0.000337	0.000000	0.000000	0.000000
10	0.000288	0.000000	0.000000	0.000000
15	0.000442	0.000576	0.011236	0.000000
20	0.000670	0.000340	0.000000	0.000000
21	0.000651	0.000589	0.000000	0.000000
22	0.000896	0.000359	0.008850	0.006024
23	0.000942	0.000406	0.006757	0.005666
24	0.000840	0.000389	0.011628	0.000000
25	0.001352	0.000485	0.009174	0.001883
26	0.001277	0.000437	0.007812	0.001499
27	0.001111	0.000581	0.003610	0.003769
28	0.001195	0.000523	0.007605	0.002628
29	0.001918	0.000581	0.003623	0.002564
30	0.001977	0.000770	0.002093	0.001971
35	0.002651	0.001175	0.003563	0.002817
40	0.003913	0.001820	0.003518	0.004175
45	0.005050	0.002975	0.005014	0.004547
50	0.006569	0.004588	0.006501	0.008368
55	0.010115	0.007283	0.009127	0.010158
60	0.014724	0.012090	0.014477	0.015631
65	0.022481	0.020427	0.023923	0.027541
70	0.037046	0.035665	0.041098	0.054044
75	0.064629	0.061850	0.070977	0.081238
80	0.111764	0.108340	0.119944	0.138533
85	0.210973	0.188281	0.220806	0.245077
gross	2.496578	2.233888	2.720447	2.994528
crude	0.004157	0.007082	0.053775	0.015707
m.age	75.8272	79.9113	73.3501	77.8480

transition rates
****

age	total	transition from nev.mar. to nev.mar.	pres mar	widowed	divorced
0	0.000000	0.000000	0.000000	0.000000	0.000000
1	0.000000	0.000000	0.000000	0.000000	0.000000
5	0.000000	0.000000	0.000000	0.000000	0.000000
10	0.000026	0.000000	0.000026	0.000000	0.000000
15	0.053844	0.000000	0.053844	0.000000	0.000000
20	0.223422	0.000000	0.223422	0.000000	0.000000
21	0.308348	0.000000	0.308348	0.000000	0.000000
22	0.326985	0.000000	0.326985	0.000000	0.000000
23	0.337293	0.000000	0.337293	0.000000	0.000000
24	0.294291	0.000000	0.294291	0.000000	0.000000
25	0.270391	0.000000	0.270391	0.000000	0.000000
26	0.193870	0.000000	0.193870	0.000000	0.000000
27	0.160476	0.000000	0.160476	0.000000	0.000000
28	0.134382	0.000000	0.134382	0.000000	0.000000
29	0.117450	0.000000	0.117450	0.000000	0.000000
30	0.066136	0.000000	0.066136	0.000000	0.000000
35	0.031280	0.000000	0.031280	0.000000	0.000000
40	0.016217	0.000000	0.016217	0.000000	0.000000
45	0.011165	0.000000	0.011165	0.000000	0.000000
50	0.007828	0.000000	0.007828	0.000000	0.000000
55	0.003285	0.000000	0.003285	0.000000	0.000000
60	0.001672	0.000000	0.001672	0.000000	0.000000
65	0.001212	0.000000	0.001212	0.000000	0.000000
70	0.000581	0.000000	0.000581	0.000000	0.000000
75	0.000564	0.000000	0.000564	0.000000	0.000000
80	0.000100	0.000000	0.000100	0.000000	0.000000
85	0.000000	0.000000	0.000000	0.000000	0.000000
gross	3.336456	0.000000	3.336456	0.000000	0.000000
crude	0.036664	0.000000	0.036664	0.000000	0.000000
m.age	24.9172	0.0000	24.9172	0.0000	0.0000

age	total	transition from pres mar to nev.mar.	pres mar	widowed	divorced
0	0.000000	0.000000	0.000000	0.000000	0.000000
1	0.000000	0.000000	0.000000	0.000000	0.000000
5	0.000000	0.000000	0.000000	0.000000	0.000000
10	0.000000	0.000000	0.000000	0.000000	0.000000
15	0.001234	0.000000	0.000000	0.000247	0.000987
20	0.001952	0.000000	0.000000	0.000297	0.001655
21	0.002916	0.000000	0.000000	0.000530	0.002386
22	0.003481	0.000000	0.000000	0.000584	0.002897
23	0.004819	0.000000	0.000000	0.000600	0.004219
24	0.005798	0.000000	0.000000	0.000707	0.005091
25	0.007525	0.000000	0.000000	0.000950	0.006575
26	0.007405	0.000000	0.000000	0.001025	0.006380
27	0.007323	0.000000	0.000000	0.001046	0.006277
28	0.007209	0.000000	0.000000	0.001002	0.006207
29	0.007083	0.000000	0.000000	0.001208	0.005876
30	0.006488	0.000000	0.000000	0.001168	0.005320
35	0.005831	0.000000	0.000000	0.001758	0.004073
40	0.005858	0.000000	0.000000	0.002985	0.002873
45	0.007120	0.000000	0.000000	0.005226	0.001894
50	0.010411	0.000000	0.000000	0.009074	0.001337
55	0.017151	0.000000	0.000000	0.016469	0.000682
60	0.028823	0.000000	0.000000	0.028433	0.000389
65	0.048445	0.000000	0.000000	0.048230	0.000215
70	0.077511	0.000000	0.000000	0.077420	0.000092
75	0.126947	0.000000	0.000000	0.126800	0.000146
80	0.230529	0.000000	0.000000	0.230529	0.000000
85	0.463712	0.000000	0.000000	0.463712	0.000000
gross	5.205808	0.000000	0.000000	5.068199	0.137609
crude	0.017971	0.000000	0.000000	0.015239	0.002732
m.age	77.5022	0.0000	0.0000	80.5677	29.8168

age	total	transition from widowed to nev.mar.	pres mar	widowed	divorced
0	0.000000	0.000000	0.000000	0.000000	0.000000
1	0.000000	0.000000	0.000000	0.000000	0.000000
5	0.000000	0.000000	0.000000	0.000000	0.000000
10	0.000000	0.000000	0.000000	0.000000	0.000000
15	0.044944	0.000000	0.044944	0.000000	0.000000
20	0.100000	0.000000	0.100000	0.000000	0.000000
21	0.109756	0.000000	0.109756	0.000000	0.000000
22	0.106195	0.000000	0.106195	0.000000	0.000000
23	0.087838	0.000000	0.087838	0.000000	0.000000
24	0.127907	0.000000	0.127907	0.000000	0.000000
25	0.114679	0.000000	0.114679	0.000000	0.000000
26	0.093750	0.000000	0.093750	0.000000	0.000000
27	0.086643	0.000000	0.086643	0.000000	0.000000
28	0.072243	0.000000	0.072243	0.000000	0.000000
29	0.057971	0.000000	0.057971	0.000000	0.000000
30	0.054416	0.000000	0.054416	0.000000	0.000000
35	0.035189	0.000000	0.035189	0.000000	0.000000
40	0.023639	0.000000	0.023639	0.000000	0.000000
45	0.014516	0.000000	0.014516	0.000000	0.000000
50	0.009890	0.000000	0.009890	0.000000	0.000000
55	0.005338	0.000000	0.005338	0.000000	0.000000
60	0.002748	0.000000	0.002748	0.000000	0.000000
65	0.001434	0.000000	0.001434	0.000000	0.000000
70	0.000535	0.000000	0.000535	0.000000	0.000000
75	0.000178	0.000000	0.000178	0.000000	0.000000
80	0.000084	0.000000	0.000084	0.000000	0.000000
85	0.000054	0.000000	0.000054	0.000000	0.000000
gross	1.921813	0.000000	1.921813	0.000000	0.000000
crude	0.003187	0.000000	0.003187	0.000000	0.000000
m.age	26.3362	0.0000	26.3362	0.0000	0.0000

| | transition | from divorced to | | | |
age	total	nev.mar.	pres mar	widowed	divorced
0	0.000000	0.000000	0.000000	0.000000	0.000000
1	0.000000	0.000000	0.000000	0.000000	0.000000
5	0.000000	0.000000	0.000000	0.000000	0.000000
10	0.000000	0.000000	0.000000	0.000000	0.000000
15	0.068182	0.000000	0.068182	0.000000	0.000000
20	0.205128	0.000000	0.205128	0.000000	0.000000
21	0.173913	0.000000	0.173913	0.000000	0.000000
22	0.283133	0.000000	0.283133	0.000000	0.000000
23	0.215297	0.000000	0.215297	0.000000	0.000000
24	0.193483	0.000000	0.193483	0.000000	0.000000
25	0.248588	0.000000	0.248588	0.000000	0.000000
26	0.226387	0.000000	0.226387	0.000000	0.000000
27	0.178392	0.000000	0.178392	0.000000	0.000000
28	0.191853	0.000000	0.191853	0.000000	0.000000
29	0.194872	0.000000	0.194872	0.000000	0.000000
30	0.139222	0.000000	0.139222	0.000000	0.000000
35	0.106317	0.000000	0.106317	0.000000	0.000000
40	0.070967	0.000000	0.070967	0.000000	0.000000
45	0.053131	0.000000	0.053131	0.000000	0.000000
50	0.042040	0.000000	0.042040	0.000000	0.000000
55	0.024694	0.000000	0.024694	0.000000	0.000000
60	0.014313	0.000000	0.014313	0.000000	0.000000
65	0.007799	0.000000	0.007799	0.000000	0.000000
70	0.003264	0.000000	0.003264	0.000000	0.000000
75	0.003868	0.000000	0.003868	0.000000	0.000000
80	0.001164	0.000000	0.001164	0.000000	0.000000
85	0.000000	0.000000	0.000000	0.000000	0.000000
gross	4.785851	0.000000	4.785851	0.000000	0.000000
crude	0.066868	0.000000	0.066868	0.000000	0.000000
m.age	27.7778	0.0000	27.7778	0.0000	0.0000

3B. Transition probabilities.

status nev.mar.
••••••••••••••••

age	death	transition from nev.mar. to			
		nev.mar.	pres mar	widowed	divorced
0	0.017693	0.982307	0.000000	0.000000	0.000000
1	0.003071	0.996929	0.000000	0.000000	0.000000
5	0.001684	0.998316	0.000000	0.000000	0.000000
10	0.001441	0.998427	0.000132	0.000000	0.000000
15	0.002291	0.761005	0.236079	0.000128	0.000498
20	0.000636	0.798487	0.200698	0.000028	0.000151
21	0.000642	0.732353	0.266645	0.000067	0.000293
22	0.000822	0.718301	0.280445	0.000077	0.000355
23	0.000866	0.710692	0.287813	0.000082	0.000547
24	0.000782	0.742821	0.255720	0.000085	0.000594
25	0.001249	0.760762	0.237190	0.000106	0.000693
26	0.001203	0.822202	0.176006	0.000086	0.000504
27	0.001072	0.850492	0.147936	0.000074	0.000426
28	0.001152	0.873031	0.125402	0.000060	0.000355
29	0.001842	0.887356	0.110442	0.000065	0.000295
30	0.009000	0.708988	0.278561	0.000713	0.002738
35	0.012648	0.843611	0.142035	0.000569	0.001136
40	0.018982	0.904175	0.075855	0.000530	0.000459
45	0.024666	0.922084	0.052381	0.000652	0.000217
50	0.032136	0.930517	0.036444	0.000794	0.000108
55	0.049221	0.935174	0.014987	0.000596	0.000024
60	0.070959	0.921247	0.007290	0.000497	0.000007
65	0.106403	0.888159	0.004882	0.000554	0.000002
70	0.169526	0.828040	0.002070	0.000363	0.000000
75	0.278193	0.719717	0.001646	0.000443	0.000000
80	0.436780	0.562916	0.000211	0.000093	0.000000
85	1.000000	0.000000	0.000000	0.000000	0.000000

status pres mar
••••••••••••••••

age	death	transition from pres mar to			
		nev.mar.	pres mar	widowed	divorced
0	0.000000	0.000000	1.000000	0.000000	0.000000
1	0.000000	0.000000	1.000000	0.000000	0.000000
5	0.000000	0.000000	1.000000	0.000000	0.000000
10	0.000000	0.000000	1.000000	0.000000	0.000000
15	0.002897	0.000000	0.991827	0.001077	0.004199
20	0.000339	0.000000	0.997878	0.000283	0.001500
21	0.000588	0.000000	0.996719	0.000502	0.002191
22	0.000369	0.000000	0.996553	0.000551	0.002527
23	0.000418	0.000000	0.995220	0.000571	0.003790
24	0.000392	0.000000	0.994321	0.000659	0.004629
25	0.000493	0.000000	0.992794	0.000892	0.005822
26	0.000443	0.000000	0.992878	0.000972	0.005707
27	0.000592	0.000000	0.992679	0.000997	0.005732
28	0.000532	0.000000	0.992871	0.000960	0.005637
29	0.000587	0.000000	0.992916	0.001167	0.005329
30	0.003916	0.000000	0.971658	0.005044	0.019382
35	0.005972	0.000000	0.970370	0.007894	0.015764
40	0.009185	0.000000	0.965198	0.013733	0.011883
45	0.014919	0.000000	0.952676	0.024323	0.008081
50	0.022932	0.000000	0.929299	0.042042	0.005727
55	0.036125	0.000000	0.885975	0.074942	0.002958
60	0.059409	0.000000	0.815240	0.123706	0.001644
65	0.098795	0.000000	0.706830	0.193531	0.000844
70	0.167150	0.000000	0.559205	0.273333	0.000312
75	0.275080	0.000000	0.358817	0.365693	0.000410
80	0.437206	0.000000	0.082792	0.480002	0.000000
85	1.000000	0.000000	0.000000	0.000000	0.000000

status widowed
****

age	death	transition from widowed to			
		nev.mar.	pres mar	widowed	divorced
0	0.000000	0.000000	0.000000	1.000000	0.000000
1	0.000000	0.000000	0.000000	1.000000	0.000000
5	0.000000	0.000000	0.000000	1.000000	0.000000
10	0.000000	0.000000	0.000000	1.000000	0.000000
15	0.049547	0.000000	0.196239	0.753801	0.000414
20	0.000016	0.000000	0.095137	0.904775	0.000071
21	0.000031	0.000000	0.103876	0.895980	0.000114
22	0.008387	0.000000	0.100245	0.891241	0.000127
23	0.006469	0.000000	0.083671	0.909701	0.000159
24	0.010893	0.000000	0.119226	0.869605	0.000277
25	0.008666	0.000000	0.107602	0.883417	0.000314
26	0.007455	0.000000	0.088902	0.903389	0.000255
27	0.003479	0.000000	0.082598	0.913686	0.000238
28	0.007331	0.000000	0.069222	0.923251	0.000196
29	0.003532	0.000000	0.056040	0.940279	0.000150
30	0.009636	0.000000	0.235023	0.753031	0.002310
35	0.016723	0.000000	0.158030	0.823983	0.001264
40	0.016982	0.000000	0.108756	0.873604	0.000658
45	0.024418	0.000000	0.067566	0.907737	0.000280
50	0.031769	0.000000	0.045826	0.922269	0.000136
55	0.044508	0.000000	0.024288	0.931166	0.000038
60	0.069786	0.000000	0.011955	0.918248	0.000011
65	0.112819	0.000000	0.005755	0.881423	0.000003
70	0.186322	0.000000	0.001888	0.811790	0.000000
75	0.301393	0.000000	0.000514	0.698093	0.000000
80	0.461369	0.000000	0.000176	0.538455	0.000000
85	1.000000	0.000000	0.000000	0.000000	0.000000

status divorced
****

age	death	transition from divorced to			
		nev.mar.	pres mar	widowed	divorced
0	0.000000	0.000000	0.000000	0.000000	1.000000
1	0.000000	0.000000	0.000000	0.000000	1.000000
5	0.000000	0.000000	0.000000	0.000000	1.000000
10	0.000000	0.000000	0.000000	0.000000	1.000000
15	0.000422	0.000000	0.290072	0.000157	0.709349
20	0.000032	0.000000	0.185849	0.000026	0.814093
21	0.000047	0.000000	0.159738	0.000040	0.840175
22	0.005309	0.000000	0.246942	0.000068	0.747681
23	0.005143	0.000000	0.193414	0.000055	0.801388
24	0.000035	0.000000	0.175915	0.000058	0.823992
25	0.001728	0.000000	0.220124	0.000098	0.778049
26	0.001391	0.000000	0.202506	0.000099	0.796004
27	0.003503	0.000000	0.162902	0.000082	0.833514
28	0.002442	0.000000	0.174227	0.000084	0.823247
29	0.002386	0.000000	0.176735	0.000104	0.820776
30	0.008291	0.000000	0.507210	0.001298	0.483201
35	0.012314	0.000000	0.411450	0.001648	0.574587
40	0.018943	0.000000	0.293521	0.002051	0.685484
45	0.021600	0.000000	0.226682	0.002824	0.748894
50	0.039299	0.000000	0.180077	0.003924	0.776700
55	0.048769	0.000000	0.107097	0.004256	0.839878
60	0.074689	0.000000	0.060428	0.004118	0.860764
65	0.128295	0.000000	0.030578	0.003467	0.837659
70	0.237551	0.000000	0.011130	0.001951	0.749368
75	0.337122	0.000000	0.010836	0.002916	0.649126
80	0.514317	0.000000	0.002336	0.001035	0.482312
85	1.000000	0.000000	0.000000	0.000000	0.000000

3C. Population-based life table statistics.

C1. Life history of initial cohort.

initial status of cohort nev.mar.
●●

1.- status at age x nev.mar.

age	deaths	transitions to			
		nev.mar.	pres mar	widowed	divorced
0	1769.	98231.	0.	0.	0.
1	302.	97929.	0.	0.	0.
5	165.	97764.	0.	0.	0.
10	141.	97610.	13.	0.	0.
15	224.	74282.	23044.	12.	49.
20	47.	59313.	14908.	2.	11.
21	38.	43438.	15816.	4.	17.
22	36.	31202.	12182.	3.	15.
23	27.	22175.	8980.	3.	17.
24	17.	16472.	5671.	2.	13.
25	21.	12531.	3907.	2.	11.
26	15.	10303.	2206.	1.	6.
27	11.	8763.	1524.	1.	4.
28	10.	7650.	1099.	1.	3.
29	14.	6788.	845.	0.	2.
30	61.	4813.	1891.	5.	19.
35	61.	4060.	684.	3.	5.
40	77.	3671.	308.	2.	2.
45	91.	3385.	192.	2.	1.
50	109.	3150.	123.	3.	0.
55	155.	2946.	47.	2.	0.
60	209.	2714.	21.	1.	0.
65	289.	2410.	13.	2.	0.
70	409.	1996.	5.	1.	0.
75	555.	1436.	3.	1.	0.
80	627.	809.	0.	0.	0.
85	809.	0.	0.	0.	0.
total	6288.	715840.	93482.	53.	177.

2.- status at age x pres mar

age	deaths	transitions to			
		nev.mar.	pres mar	widowed	divorced
0	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.
15	0.	0.	13.	0.	0.
20	8.	0.	23008.	7.	35.
21	22.	0.	37802.	19.	83.
22	20.	0.	53448.	30.	136.
23	27.	0.	65363.	38.	249.
24	29.	0.	73980.	49.	344.
25	39.	0.	79175.	71.	464.
26	37.	0.	82671.	81.	475.
27	50.	0.	84488.	85.	488.
28	46.	0.	85635.	83.	486.
29	51.	0.	86419.	102.	464.
30	343.	0.	85122.	442.	1698.
35	526.	0.	85500.	696.	1389.
40	803.	0.	84363.	1200.	1039.
45	1278.	0.	81622.	2084.	692.
50	1896.	0.	76822.	3475.	473.
55	2806.	0.	68820.	5821.	230.
60	4120.	0.	56533.	8578.	114.
65	5618.	0.	40192.	11005.	48.
70	6752.	0.	22588.	11041.	13.
75	6236.	0.	8134.	8290.	9.
80	3573.	0.	677.	3922.	0.
85	685.	0.	0.	0.	0.
total	34965.	0.	1282375.	57118.	8929.

3.- status at age x widowed

age	deaths	transitions to nev.mar.	pres mar	widowed	divorced
0	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.
20	0.	0.	1.	11.	0.
21	0.	0.	2.	18.	0.
22	0.	0.	4.	36.	0.
23	0.	0.	6.	63.	0.
24	1.	0.	12.	90.	0.
25	1.	0.	15.	124.	0.
26	1.	0.	18.	178.	0.
27	1.	0.	22.	238.	0.
28	2.	0.	22.	299.	0.
29	1.	0.	21.	359.	0.
30	4.	0.	109.	348.	1.
35	13.	0.	126.	657.	1.
40	23.	0.	148.	1188.	1.
45	59.	0.	162.	2175.	1.
50	136.	0.	196.	3938.	1.
55	331.	0.	180.	6917.	0.
60	890.	0.	152.	11709.	0.
65	2290.	0.	117.	17893.	0.
70	5386.	0.	55.	23466.	0.
75	10402.	0.	18.	24092.	0.
80	14943.	0.	6.	17439.	0.
85	21363.	0.	0.	0.	0.
total	55848.	0.	1391.	111238.	5.

4.- status at age x divorced

age	deaths	transitions to nev.mar.	pres mar	widowed	divorced
0	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.
20	0.	0.	9.	0.	40.
21	0.	0.	14.	0.	72.
22	1.	0.	43.	0.	129.
23	1.	0.	54.	0.	224.
24	0.	0.	86.	0.	404.
25	1.	0.	168.	0.	592.
26	1.	0.	216.	0.	850.
27	5.	0.	217.	0.	1110.
28	4.	0.	279.	0.	1319.
29	4.	0.	320.	0.	1484.
30	16.	0.	989.	3.	942.
35	33.	0.	1094.	4.	1528.
40	55.	0.	858.	6.	2004.
45	66.	0.	690.	9.	2281.
50	117.	0.	536.	12.	2310.
55	136.	0.	298.	12.	2339.
60	192.	0.	155.	11.	2211.
65	298.	0.	71.	8.	1948.
70	474.	0.	22.	4.	1496.
75	509.	0.	16.	4.	979.
80	508.	0.	2.	1.	477.
85	477.	0.	0.	0.	0.
total	2899.	0.	6139.	74.	24741.

C2. Expected number of survivors at exact age x in each status.

<pre>
    age   initial status of cohort nev.mar.
    •••   ••••••••••••••••••••••••••••••••••••••
</pre>

age	total	nev.mar.	pres mar	widowed	divorced
0	100000.	100000.	0.	0.	0.
1	98231.	98231.	0.	0.	0.
5	97929.	97929.	0.	0.	0.
10	97764.	97764.	0.	0.	0.
15	97623.	97610.	13.	0.	0.
20	97400.	74282.	23057.	12.	49.
21	97344.	59313.	37926.	20.	85.
22	97284.	43438.	53633.	41.	172.
23	97227.	31202.	65677.	69.	280.
24	97171.	22175.	74403.	103.	490.
25	97123.	16472.	79749.	141.	761.
26	97061.	12531.	83264.	197.	1068.
27	97006.	10303.	85111.	260.	1332.
28	96939.	8763.	86250.	324.	1602.
29	96877.	7650.	87036.	382.	1809.
30	96806.	6788.	87605.	462.	1950.
35	96381.	4813.	88111.	797.	2660.
40	95748.	4060.	87404.	1359.	2924.
45	94790.	3671.	85677.	2396.	3046.
50	93296.	3385.	82667.	4270.	2975.
55	91039.	3150.	77677.	7428.	2785.
60	87612.	2946.	69346.	12752.	2569.
65	82201.	2714.	56862.	20300.	2326.
70	73706.	2410.	40393.	28907.	1996.
75	60686.	1996.	22670.	34512.	1508.
80	42984.	1436.	8172.	32388.	988.
85	23333.	809.	685.	21363.	477.

C3. Number of years lived in each status by a unit cohort.

<pre>
    age   initial status of cohort nev.mar.
    •••   ••••••••••••••••••••••••••••••••••••••
</pre>

age	total	nev.mar.	pres mar	widowed	divorced
0	0.99115	0.99115	0.00000	0.00000	0.00000
1	3.92319	3.92319	0.00000	0.00000	0.00000
5	4.89233	4.89233	0.00000	0.00000	0.00000
10	4.88468	4.88436	0.00032	0.00000	0.00000
15	4.87557	4.29730	0.57674	0.00031	0.00122
20	0.97372	0.66798	0.30491	0.00016	0.00067
21	0.97314	0.51376	0.45779	0.00030	0.00129
22	0.97256	0.37320	0.59655	0.00055	0.00226
23	0.97199	0.26688	0.70040	0.00086	0.00385
24	0.97147	0.19323	0.77076	0.00122	0.00626
25	0.97092	0.14502	0.81507	0.00169	0.00915
26	0.97033	0.11417	0.84188	0.00229	0.01200
27	0.96972	0.09533	0.85680	0.00292	0.01467
28	0.96908	0.08206	0.86643	0.00353	0.01705
29	0.96841	0.07219	0.87321	0.00422	0.01879
30	4.82967	0.29003	4.39291	0.03146	0.11526
35	4.80323	0.22183	4.38789	0.05391	0.13960
40	4.76344	0.19328	4.32703	0.09388	0.14924
45	4.70215	0.17641	4.20859	0.16665	0.15051
50	4.60840	0.16337	4.00859	0.29244	0.14399
55	4.46628	0.15239	3.67556	0.50448	0.13385
60	4.24533	0.14149	3.15520	0.82628	0.12237
65	3.89769	0.12810	2.43139	1.23016	0.10804
70	3.35980	0.11015	1.57658	1.58546	0.08761
75	2.59176	0.08580	0.77104	1.67249	0.06242
80	1.65794	0.05612	0.22141	1.34377	0.03663
85	1.05786	0.03833	0.01059	0.98949	0.01945

C4. Number of years lived in each status by person of age x.

age
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status at age x nev.mar.
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age	total	nev.mar.	pres mar	widowed	divorced
0	0.99115	0.99115	0.00000	0.00000	0.00000
1	3.99386	3.99386	0.00000	0.00000	0.00000
5	4.99579	4.99579	0.00000	0.00000	0.00000
10	4.99640	4.99607	0.00033	0.00000	0.00000
15	4.99427	4.40251	0.59020	0.00032	0.00124
20	0.99968	0.89924	0.10035	0.00001	0.00008
21	0.99968	0.86618	0.13332	0.00003	0.00015
22	0.99959	0.85915	0.14022	0.00004	0.00018
23	0.99957	0.85535	0.14391	0.00004	0.00027
24	0.99961	0.87141	0.12786	0.00004	0.00030
25	0.99938	0.88038	0.11859	0.00005	0.00035
26	0.99940	0.91110	0.08800	0.00004	0.00025
27	0.99946	0.92525	0.07397	0.00004	0.00021
28	0.99942	0.93652	0.06270	0.00003	0.00018
29	0.99908	0.94368	0.05522	0.00003	0.00015
30	4.97750	4.27247	0.69640	0.00178	0.00685
35	4.96838	4.60903	0.35509	0.00142	0.00284
40	4.95255	4.76044	0.18964	0.00133	0.00115
45	4.93833	4.80521	0.13095	0.00163	0.00054
50	4.91966	4.82629	0.09111	0.00199	0.00027
55	4.87695	4.83793	0.03747	0.00149	0.00006
60	4.82260	4.80312	0.01822	0.00124	0.00002
65	4.73399	4.72040	0.01220	0.00138	0.00001
70	4.57619	4.57010	0.00518	0.00091	0.00000
75	4.30452	4.29929	0.00412	0.00111	0.00000
80	3.90805	3.90729	0.00053	0.00023	0.00000
85	4.73994	4.73994	0.00000	0.00000	0.00000

C5. Total number of years lived beyond age x.

age
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initial status of cohort nev.mar.
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age	total	nev.mar.	pres mar	widowed	divorced
0	74.26183	23.26945	40.82764	8.80855	1.35619
1	73.27067	22.27829	40.82764	8.80855	1.35619
5	69.34747	18.35510	40.82764	8.80855	1.35619
10	64.45515	13.46278	40.82764	8.80855	1.35619
15	59.57047	8.57842	40.82732	8.80855	1.35619
20	54.69490	4.28111	40.25058	8.80823	1.35497
21	53.72118	3.61314	39.94567	8.80807	1.35430
22	52.74804	3.09938	39.48787	8.80777	1.35301
23	51.77548	2.72618	38.89133	8.80722	1.35076
24	50.80349	2.45930	38.19093	8.80635	1.34691
25	49.83202	2.26607	37.42017	8.80513	1.34065
26	48.86110	2.12105	36.60510	8.80344	1.33150
27	47.89077	2.00688	35.76323	8.80116	1.31950
28	46.92104	1.91155	34.90642	8.79824	1.30483
29	45.95196	1.82949	34.03999	8.79471	1.28778
30	44.98355	1.75730	33.16678	8.79049	1.26898
35	40.15388	1.46727	28.77387	8.75902	1.15372
40	35.35065	1.24544	24.38598	8.70512	1.01412
45	30.58721	1.05215	20.05895	8.61123	0.86488
50	25.88507	0.87575	15.85036	8.44458	0.71437
55	21.27667	0.71237	11.84177	8.15214	0.57038
60	16.81038	0.55998	8.16621	7.64766	0.43653
65	12.56505	0.41850	5.01101	6.82138	0.31416
70	8.66736	0.29040	2.57962	5.59122	0.20612
75	5.30756	0.18025	1.00304	4.00576	0.11851
80	2.71580	0.09445	0.23200	2.33327	0.05608
85	1.05786	0.03833	0.01059	0.98949	0.01945

C6. Population-based life expectancies at age x.

age	initial status of cohort nev.mar.				
	total	nev.mar.	pres mar	widowed	divorced
0	74.26183	23.26945	40.82764	8.80855	1.35619
1	74.59043	22.67957	41.56303	8.96721	1.38062
5	70.81405	18.74328	41.69107	8.99483	1.38487
10	65.92931	13.77069	41.76141	9.01001	1.38721
15	61.02082	8.78728	41.82133	9.02301	1.38921
20	56.15521	4.39542	41.32524	9.04341	1.39115
21	55.18671	3.71171	41.03539	9.04836	1.39125
22	54.22067	3.18591	40.59030	9.05366	1.39079
23	53.25201	2.80393	40.00043	9.05838	1.38928
24	52.28261	2.53090	39.30284	9.06275	1.38612
25	51.30801	2.33319	38.52852	9.06594	1.38036
26	50.34067	2.18528	37.71355	9.07002	1.37182
27	49.36889	2.06883	36.86704	9.07280	1.36023
28	48.40266	1.97192	36.00866	9.07606	1.34603
29	47.43343	1.88847	35.13742	9.07825	1.32929
30	46.46781	1.81528	34.26114	9.08054	1.31085
35	41.66158	1.52236	29.85428	9.08791	1.19704
40	36.92054	1.30075	25.46893	9.09170	1.05915
45	32.26854	1.10999	21.16155	9.08458	0.91242
50	27.74495	0.93867	16.98924	9.05134	0.76570
55	23.37084	0.78249	13.00731	8.95452	0.62652
60	19.18734	0.63916	9.32090	8.72902	0.49825
65	15.28570	0.50911	6.09602	8.29838	0.38219
70	11.75932	0.39400	3.49986	7.58581	0.27965
75	8.74595	0.29702	1.65284	6.60081	0.19528
80	6.31809	0.21973	0.53973	5.42816	0.13047
85	4.53370	0.16425	0.04537	4.24070	0.08337

3D. Marital status-based life table statistics
Life history of initial cohort.

D1. Expected number of survivors at exact age x in each status.

age initial status of cohort nev.mar.

age	total	nev.mar.	pres mar	widowed	divorced
20	100000.	100000.	0.	0.	0.
21	99936.	79849.	20070.	3.	15.
22	99873.	58477.	41298.	18.	80.
23	99809.	42004.	57577.	43.	185.
24	99748.	29852.	69430.	76.	389.
25	99696.	22175.	76747.	114.	660.
26	99629.	16870.	81612.	172.	976.
27	99570.	13870.	84212.	236.	1251.
28	99500.	11797.	85871.	301.	1531.
29	99435.	10299.	87026.	361.	1749.
30	99359.	9139.	87876.	442.	1902.
35	98913.	6479.	89000.	785.	2648.
40	98253.	5466.	88497.	1357.	2933.
45	97258.	4942.	86840.	2410.	3066.
50	95716.	4557.	83847.	4312.	2999.
55	93391.	4240.	78823.	7517.	2811.
60	89864.	3966.	70382.	12921.	2594.
65	84305.	3653.	57719.	20584.	2349.
70	75591.	3245.	41005.	29324.	2016.
75	62244.	2687.	23015.	35018.	1524.
80	44097.	1934.	8297.	32868.	999.
85	23947.	1088.	695.	21682.	482.

age initial status of cohort pres mar

age	total	nev.mar.	pres mar	widowed	divorced
20	100000.	0.	100000.	0.	0.
21	99966.	0.	99788.	28.	150.
22	99907.	0.	99487.	75.	345.
23	99868.	0.	99237.	122.	509.
24	99823.	0.	98871.	168.	784.
25	99783.	0.	98468.	211.	1104.
26	99731.	0.	98024.	274.	1432.
27	99683.	0.	97640.	343.	1699.
28	99618.	0.	97231.	411.	1976.
29	99559.	0.	96910.	473.	2175.
30	99495.	0.	96635.	558.	2302.
35	99092.	0.	95195.	911.	2986.
40	98471.	0.	93747.	1507.	3218.
45	97524.	0.	91593.	2611.	3321.
50	96022.	0.	88187.	4607.	3228.
55	93726.	0.	82745.	7969.	3013.
60	90236.	0.	73826.	13634.	2775.
65	84691.	0.	60516.	21664.	2511.
70	75946.	0.	42976.	30816.	2154.
75	62509.	0.	24115.	36767.	1628.
80	44246.	0.	8689.	34490.	1066.
85	23986.	0.	728.	22743.	514.

age   initial status of cohort   widowed
***   ●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●

age	total	nev.mar.	pres mar	widowed	divorced
20	100000.	0.	0.	100000.	0.
21	99998.	0.	9514.	90478.	7.
22	99990.	0.	18882.	81071.	37.
23	99303.	0.	26953.	72264.	86.
24	98824.	0.	32887.	65754.	182.
25	98095.	0.	40572.	57202.	321.
26	97578.	0.	46505.	50569.	504.
27	97180.	0.	50772.	45729.	679.
28	96989.	0.	54288.	41833.	868.
29	96651.	0.	56948.	38674.	1029.
30	96478.	0.	58894.	36431.	1154.
35	95887.	0.	66372.	27732.	1783.
40	95005.	0.	69521.	23378.	2106.
45	93930.	0.	70263.	21382.	2285.
50	92310.	0.	68900.	21125.	2285.
55	89969.	0.	65408.	22388.	2172.
60	86504.	0.	58727.	25758.	2019.
65	81066.	0.	48306.	30926.	1835.
70	72570.	0.	34378.	36614.	1578.
75	59627.	0.	19311.	39122.	1193.
80	42121.	0.	6962.	34377.	782.
85	22815.	0.	584.	21853.	377.

age   initial status of cohort   divorced
***   ●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●

age	total	nev.mar.	pres mar	widowed	divorced
20	100000.	0.	0.	0.	100000.
21	99997.	0.	18585.	3.	81409.
22	99982.	0.	31528.	15.	68439.
23	99607.	0.	48322.	35.	51250.
24	99323.	0.	58006.	63.	41254.
25	99298.	0.	64941.	95.	34262.
26	99206.	0.	72025.	145.	27035.
27	99136.	0.	77000.	204.	21931.
28	99012.	0.	80026.	265.	18722.
29	98922.	0.	82736.	323.	15864.
30	98835.	0.	84971.	402.	13461.
35	98386.	0.	89485.	749.	8152.
40	97739.	0.	90307.	1337.	6096.
45	96772.	0.	89098.	2421.	5253.
50	95270.	0.	86236.	4379.	4654.
55	92970.	0.	81178.	7683.	4110.
60	89495.	0.	72548.	13255.	3692.
65	83984.	0.	59526.	21161.	3297.
70	75293.	0.	42297.	30183.	2812.
75	61931.	0.	23741.	36069.	2121.
80	43814.	0.	8560.	33868.	1386.
85	23733.	0.	718.	22347.	669.

D2. Number of years lived in each status by a unit cohort.

age initial status of cohort nev.mar.
●●● ●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●

age	total	nev.mar.	pres mar	widowed	divorced
20	0.99968	0.89924	0.10035	0.00001	0.00008
21	0.99905	0.69163	0.30684	0.00010	0.00048
22	0.99841	0.50241	0.49437	0.00031	0.00132
23	0.99779	0.35928	0.63504	0.00060	0.00287
24	0.99722	0.26013	0.73089	0.00095	0.00525
25	0.99663	0.19522	0.79179	0.00143	0.00818
26	0.99599	0.15370	0.82912	0.00204	0.01113
27	0.99535	0.12833	0.85042	0.00268	0.01391
28	0.99467	0.11048	0.86448	0.00331	0.01640
29	0.99397	0.09719	0.87451	0.00401	0.01826
30	4.95679	0.39045	4.42190	0.03067	0.11377
35	4.92915	0.29863	4.43742	0.05356	0.13954
40	4.88779	0.26020	4.38343	0.09419	0.14997
45	4.82434	0.23748	4.26719	0.16805	0.15162
50	4.72768	0.21994	4.06676	0.29573	0.14526
55	4.58138	0.20515	3.73013	0.51096	0.13513
60	4.35423	0.19047	3.20252	0.83765	0.12358
65	3.99740	0.17245	2.46810	1.24771	0.10914
70	3.44586	0.14829	1.60051	1.60856	0.08851
75	2.65853	0.11551	0.78280	1.69716	0.06306
80	1.70112	0.07555	0.22481	1.36375	0.03701
85	1.08627	0.05159	0.01075	1.00427	0.01965

age initial status of cohort pres mar
●●● ●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●

age	total	nev.mar.	pres mar	widowed	divorced
20	0.99983	0.00000	0.99894	0.00014	0.00075
21	0.99937	0.00000	0.99638	0.00052	0.00247
22	0.99888	0.00000	0.99362	0.00099	0.00427
23	0.99846	0.00000	0.99054	0.00145	0.00647
24	0.99803	0.00000	0.98670	0.00189	0.00944
25	0.99757	0.00000	0.98246	0.00243	0.01268
26	0.99707	0.00000	0.97832	0.00309	0.01566
27	0.99651	0.00000	0.97435	0.00377	0.01838
28	0.99588	0.00000	0.97070	0.00442	0.02076
29	0.99527	0.00000	0.96773	0.00516	0.02238
30	4.96467	0.00000	4.79573	0.03673	0.13221
35	4.93908	0.00000	4.72353	0.06044	0.15511
40	4.89988	0.00000	4.63348	0.10294	0.16346
45	4.83864	0.00000	4.49449	0.18043	0.16371
50	4.74370	0.00000	4.27329	0.31439	0.15601
55	4.59904	0.00000	3.91426	0.54008	0.14470
60	4.37316	0.00000	3.35856	0.88245	0.13215
65	4.01592	0.00000	2.58732	1.31198	0.11661
70	3.46138	0.00000	1.67728	1.68956	0.09454
75	2.66887	0.00000	0.82010	1.78142	0.06735
80	1.70578	0.00000	0.23543	1.43083	0.03952
85	1.08562	0.00000	0.01125	1.05338	0.02099

age
•••

initial status of cohort   widowed
•••••••••••••••••••••••••••••••••••••••

	total	nev.mar.	pres mar	widowed	divorced
20	0.99999	0.00000	0.04757	0.95239	0.00004
21	0.99994	0.00000	0.14198	0.85774	0.00022
22	0.99647	0.00000	0.22918	0.76667	0.00061
23	0.99063	0.00000	0.29920	0.69009	0.00134
24	0.98459	0.00000	0.36730	0.61478	0.00252
25	0.97836	0.00000	0.43539	0.53886	0.00412
26	0.97379	0.00000	0.48639	0.48149	0.00591
27	0.97084	0.00000	0.52530	0.43781	0.00774
28	0.96820	0.00000	0.55618	0.40253	0.00948
29	0.96565	0.00000	0.57921	0.37553	0.01091
30	4.80914	0.00000	3.13164	1.60409	0.07342
35	4.77231	0.00000	3.39733	1.27775	0.09722
40	4.72337	0.00000	3.49460	1.11900	0.10977
45	4.65599	0.00000	3.47907	1.06267	0.11425
50	4.55697	0.00000	3.35771	1.08783	0.11143
55	4.41182	0.00000	3.10337	1.20367	0.10478
60	4.18925	0.00000	2.67582	1.41710	0.09633
65	3.84090	0.00000	2.06711	1.68849	0.08530
70	3.30491	0.00000	1.34224	1.89341	0.06926
75	2.54369	0.00000	0.65683	1.83748	0.04938
80	1.62339	0.00000	0.18866	1.40574	0.02899
85	1.03288	0.00000	0.00905	1.00844	0.01540

age
•••

initial status of cohort   divorced
•••••••••••••••••••••••••••••••••••••••

	total	nev.mar.	pres mar	widowed	divorced
20	0.99998	0.00000	0.09292	0.00001	0.90705
21	0.99989	0.00000	0.25057	0.00009	0.74924
22	0.99795	0.00000	0.39925	0.00025	0.59844
23	0.99465	0.00000	0.53164	0.00049	0.46252
24	0.99311	0.00000	0.61474	0.00079	0.37758
25	0.99252	0.00000	0.68483	0.00120	0.30649
26	0.99171	0.00000	0.74513	0.00175	0.24483
27	0.99074	0.00000	0.78513	0.00234	0.20326
28	0.98967	0.00000	0.81381	0.00294	0.17293
29	0.98878	0.00000	0.83854	0.00362	0.14662
30	4.93053	0.00000	4.36142	0.02877	0.54034
35	4.90314	0.00000	4.49480	0.05214	0.35620
40	4.86277	0.00000	4.48512	0.09393	0.28371
45	4.80103	0.00000	4.38336	0.16999	0.24767
50	4.70599	0.00000	4.18535	0.30154	0.21910
55	4.56163	0.00000	3.84316	0.52344	0.19504
60	4.33699	0.00000	3.30185	0.86040	0.17473
65	3.98194	0.00000	2.54558	1.28362	0.15274
70	3.43061	0.00000	1.65096	1.65632	0.12333
75	2.64364	0.00000	0.80753	1.74843	0.08768
80	1.68869	0.00000	0.23195	1.40537	0.05137
85	1.07348	0.00000	0.01110	1.03510	0.02728

D3. Number of years lived in each status by person of age x̄.

age	status at age x	nev.mar.			
	total	nev.mar.	pres mar	widowed	divorced
20	0.99968	0.89924	0.10035	0.00001	0.00008
21	0.99968	0.86618	0.13332	0.00003	0.00015
22	0.99959	0.85915	0.14022	0.00004	0.00018
23	0.99957	0.85535	0.14391	0.00004	0.00027
24	0.99961	0.87141	0.12786	0.00004	0.00030
25	0.99938	0.88038	0.11859	0.00005	0.00035
26	0.99940	0.91110	0.08800	0.00004	0.00025
27	0.99946	0.92525	0.07397	0.00004	0.00021
28	0.99942	0.93652	0.06270	0.00003	0.00018
29	0.99908	0.94368	0.05522	0.00003	0.00015
30	4.97750	4.27247	0.69640	0.00178	0.00685
35	4.96838	4.60903	0.35509	0.00142	0.00284
40	4.95255	4.76044	0.18964	0.00133	0.00115
45	4.93833	4.80521	0.13095	0.00163	0.00054
50	4.91966	4.82629	0.09111	0.00199	0.00027
55	4.87695	4.83793	0.03747	0.00149	0.00006
60	4.82260	4.80312	0.01822	0.00124	0.00002
65	4.73399	4.72040	0.01220	0.00138	0.00001
70	4.57619	4.57010	0.00518	0.00091	0.00000
75	4.30452	4.29929	0.00412	0.00111	0.00000
80	3.90805	3.90729	0.00053	0.00023	0.00000
85	4.73994	4.73994	0.00000	0.00000	0.00000

age	status at age x	pres mar			
	total	nev.mar.	pres mar	widowed	divorced
20	0.99983	0.00000	0.99894	0.00014	0.00075
21	0.99971	0.00000	0.99836	0.00025	0.00110
22	0.99982	0.00000	0.99828	0.00028	0.00126
23	0.99979	0.00000	0.99761	0.00029	0.00190
24	0.99980	0.00000	0.99716	0.00033	0.00231
25	0.99975	0.00000	0.99640	0.00045	0.00291
26	0.99978	0.00000	0.99644	0.00049	0.00285
27	0.99970	0.00000	0.99634	0.00050	0.00287
28	0.99973	0.00000	0.99644	0.00048	0.00282
29	0.99971	0.00000	0.99646	0.00058	0.00266
30	4.99021	0.00000	4.92915	0.01261	0.04845
35	4.98507	0.00000	4.92593	0.01974	0.03941
40	4.97704	0.00000	4.91300	0.03433	0.02971
45	4.96270	0.00000	4.88169	0.06081	0.02020
50	4.94267	0.00000	4.82325	0.10510	0.01432
55	4.90969	0.00000	4.71494	0.18736	0.00740
60	4.85148	0.00000	4.53810	0.30927	0.00411
65	4.75301	0.00000	4.26707	0.48383	0.00211
70	4.58213	0.00000	3.89801	0.68333	0.00078
75	4.31230	0.00000	3.39704	0.91423	0.00103
80	3.90698	0.00000	2.70698	1.20000	0.00000
85	4.75483	0.00000	1.53403	3.22080	0.00000

age status at age x   widowed
●●● ●●●●●●●●●●●●●●●●●●●●●●●●●●●●●

	total	nev.mar.	pres mar	widowed	divorced
20	0.99999	0.00000	0.04757	0.95239	0.00004
21	0.99998	0.00000	0.05194	0.94799	0.00006
22	0.99581	0.00000	0.05012	0.94562	0.00006
23	0.99677	0.00000	0.04184	0.95485	0.00008
24	0.99455	0.00000	0.05961	0.93480	0.00014
25	0.99567	0.00000	0.05380	0.94171	0.00016
26	0.99627	0.00000	0.04445	0.95169	0.00013
27	0.99826	0.00000	0.04130	0.95684	0.00012
28	0.99633	0.00000	0.03461	0.96163	0.00010
29	0.99823	0.00000	0.02802	0.97014	0.00007
30	4.97591	0.00000	0.58756	4.38258	0.00578
35	4.95819	0.00000	0.39507	4.55996	0.00316
40	4.95755	0.00000	0.27189	4.68401	0.00164
45	4.93896	0.00000	0.16891	4.76934	0.00070
50	4.92058	0.00000	0.11457	4.80567	0.00034
55	4.88873	0.00000	0.06072	4.82792	0.00010
60	4.82553	0.00000	0.02989	4.79562	0.00003
65	4.71795	0.00000	0.01439	4.70356	0.00001
70	4.53419	0.00000	0.00472	4.52947	0.00000
75	4.24652	0.00000	0.00128	4.24523	0.00000
80	3.84658	0.00000	0.00044	3.84614	0.00000
85	4.52892	0.00000	0.00038	4.52854	0.00000

age status at age x   divorced
●●● ●●●●●●●●●●●●●●●●●●●●●●●●●●●●●

	total	nev.mar.	pres mar	widowed	divorced
20	0.99998	0.00000	0.09292	0.00001	0.90705
21	0.99998	0.00000	0.07987	0.00002	0.92009
22	0.99735	0.00000	0.12347	0.00003	0.87384
23	0.99743	0.00000	0.09671	0.00003	0.90069
24	0.99998	0.00000	0.08796	0.00003	0.91200
25	0.99914	0.00000	0.11006	0.00005	0.88902
26	0.99930	0.00000	0.10125	0.00005	0.89800
27	0.99825	0.00000	0.08145	0.00004	0.91676
28	0.99878	0.00000	0.08711	0.00004	0.91162
29	0.99881	0.00000	0.08837	0.00005	0.91039
30	4.97927	0.00000	1.26803	0.00324	3.70800
35	4.96921	0.00000	1.02863	0.00412	3.93647
40	4.95264	0.00000	0.73380	0.00513	4.21371
45	4.94600	0.00000	0.56670	0.00706	4.37224
50	4.90175	0.00000	0.45019	0.00981	4.44175
55	4.87808	0.00000	0.26774	0.01064	4.59969
60	4.81328	0.00000	0.15107	0.01030	4.65191
65	4.67926	0.00000	0.07645	0.00867	4.59415
70	4.40612	0.00000	0.02783	0.00488	4.37342
75	4.15720	0.00000	0.02709	0.00729	4.12282
80	3.71421	0.00000	0.00584	0.00259	3.70578
85	4.08036	0.00000	0.00000	0.00000	4.08036

D4. Total number of years lived beyond age x.

age initial status of cohort nev.mar.
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age	total	nev.mar.	pres mar	widowed	divorced
20	56.11929	5.76333	40.07413	8.92770	1.35412
21	55.11961	4.86409	39.97378	8.92769	1.35404
22	54.12056	4.17246	39.66694	8.92758	1.35357
23	53.12214	3.67005	39.17257	8.92728	1.35224
24	52.12436	3.31077	38.53753	8.92668	1.34937
25	51.12714	3.05064	37.80664	8.92573	1.34412
26	50.13051	2.85541	37.01485	8.92430	1.33595
27	49.13452	2.70171	36.18573	8.92226	1.32481
28	48.13918	2.57338	35.33532	8.91958	1.31090
29	47.14450	2.46290	34.47083	8.91627	1.29450
30	46.15054	2.36571	33.59632	8.91226	1.27624
35	41.19375	1.97527	29.17442	8.88159	1.16247
40	36.26460	1.67664	24.73700	8.82802	1.02294
45	31.37681	1.41643	20.35357	8.73383	0.87297
50	26.55246	1.17895	16.08638	8.56578	0.72134
55	21.82478	0.95901	12.01963	8.27006	0.57609
60	17.24341	0.75386	8.28949	7.75909	0.44096
65	12.88918	0.56339	5.08697	6.92144	0.31737
70	8.89178	0.39094	2.61887	5.67373	0.20823
75	5.44592	0.24266	1.01836	4.06517	0.11973
80	2.78739	0.12715	0.23556	2.36801	0.05666
85	1.08627	0.05159	0.01075	1.00427	0.01965

age initial status of cohort pres mar
*** ***

age	total	nev.mar.	pres mar	widowed	divorced
20	56.27260	0.00000	45.36448	9.40850	1.49962
21	55.27277	0.00000	44.36554	9.40836	1.49887
22	54.27340	0.00000	43.36916	9.40784	1.49640
23	53.27452	0.00000	42.37554	9.40686	1.49213
24	52.27607	0.00000	41.38500	9.40541	1.48566
25	51.27804	0.00000	40.39830	9.40351	1.47622
26	50.28047	0.00000	39.41584	9.40109	1.46354
27	49.28340	0.00000	38.43752	9.39800	1.44789
28	48.28690	0.00000	37.46317	9.39423	1.42951
29	47.29102	0.00000	36.49246	9.38980	1.40875
30	46.29575	0.00000	35.52474	9.38465	1.38637
35	41.33108	0.00000	30.72900	9.34792	1.25416
40	36.39199	0.00000	26.00546	9.28747	1.09905
45	31.49212	0.00000	21.37198	9.18454	0.93559
50	26.65347	0.00000	16.87749	9.00411	0.77188
55	21.90977	0.00000	12.60419	8.68971	0.61587
60	17.31073	0.00000	8.68993	8.14963	0.47116
65	12.93757	0.00000	5.33138	7.26717	0.33902
70	8.92165	0.00000	2.74406	5.95519	0.22240
75	5.46028	0.00000	1.06678	4.26563	0.12786
80	2.79141	0.00000	0.24668	2.48422	0.06051
85	1.08562	0.00000	0.01125	1.05338	0.02099

age initial status of cohort widowed
●●● ●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●

	total	nev.mar.	pres mar	widowed	divorced
20	54.29309	0.00000	30.57110	22.72355	0.99844
21	53.29310	0.00000	30.52353	21.77116	0.99841
22	52.29316	0.00000	30.38156	20.91342	0.99819
23	51.29670	0.00000	30.15238	20.14674	0.99757
24	50.30606	0.00000	29.85318	19.45665	0.99623
25	49.32147	0.00000	29.48588	18.84187	0.99372
26	48.34310	0.00000	29.05049	18.30301	0.98959
27	47.36931	0.00000	28.56411	17.82152	0.98368
28	46.39847	0.00000	28.03881	17.38372	0.97594
29	45.43027	0.00000	27.48263	16.98118	0.96646
30	44.46463	0.00000	26.90342	16.60566	0.95555
35	39.65548	0.00000	23.77178	15.00157	0.88213
40	34.88317	0.00000	20.37445	13.72382	0.78490
45	30.15981	0.00000	16.87986	12.60482	0.67513
50	25.50382	0.00000	13.40079	11.54215	0.56088
55	20.94685	0.00000	10.04308	10.45432	0.44944
60	16.53503	0.00000	6.93971	9.25065	0.34467
65	12.34577	0.00000	4.26389	7.83355	0.24833
70	8.50487	0.00000	2.19678	6.14506	0.16303
75	5.19996	0.00000	0.85454	4.25165	0.09377
80	2.65627	0.00000	0.19771	2.41418	0.04439
85	1.03288	0.00000	0.00905	1.00844	0.01540

age initial status of cohort divorced
●●● ●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●

	total	nev.mar.	pres mar	widowed	divorced
20	55.85945	0.00000	40.05873	9.17255	6.62817
21	54.85946	0.00000	39.96581	9.17253	5.72112
22	53.85957	0.00000	39.71524	9.17245	4.97188
23	52.86163	0.00000	39.31599	9.17219	4.37344
24	51.86697	0.00000	38.78436	9.17170	3.91091
25	50.87387	0.00000	38.16962	9.17092	3.53333
26	49.88135	0.00000	37.48478	9.16971	3.22685
27	48.88964	0.00000	36.73965	9.16797	2.98201
28	47.89890	0.00000	35.95452	9.16562	2.77875
29	46.90923	0.00000	35.14072	9.16268	2.60582
30	45.92044	0.00000	34.30218	9.15906	2.45920
35	40.98991	0.00000	29.94076	9.13029	1.91885
40	36.08677	0.00000	25.44596	9.07815	1.56265
45	31.22400	0.00000	20.96084	8.98422	1.27894
50	26.42297	0.00000	16.57748	8.81423	1.03127
55	21.71698	0.00000	12.39213	8.51268	0.81217
60	17.15535	0.00000	8.54897	7.98924	0.61713
65	12.81836	0.00000	5.24712	7.12884	0.44240
70	8.83643	0.00000	2.70154	5.84522	0.28966
75	5.40582	0.00000	1.05058	4.18890	0.16633
80	2.76218	0.00000	0.24305	2.44047	0.07866
85	1.07348	0.00000	0.01110	1.03510	0.02728

D5. Expectations of life by status at age 20.

age ***	initial status of cohort nev.mar. ●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●				
	total	nev.mar.	pres mar	widowed	divorced
20	56.11929	5.76333	40.07413	8.92770	1.35412
21	55.15470	4.86719	39.99923	8.93337	1.35490
22	54.18923	4.17776	39.71728	8.93891	1.35529
23	53.22358	3.67706	39.24737	8.94432	1.35483
24	52.25618	3.31914	38.63500	8.94926	1.35278
25	51.28285	3.05993	37.92179	8.95292	1.34822
26	50.31733	2.86605	37.15279	8.95756	1.34092
27	49.34690	2.71339	36.34214	8.96083	1.33054
28	48.38121	2.58632	35.51298	8.96443	1.31749
29	47.41261	2.47691	34.66686	8.96698	1.30186
30	46.44828	2.38098	33.81307	8.96975	1.28448
35	41.64663	1.99698	29.49516	8.97923	1.17525
40	36.90925	1.70644	25.17674	8.98495	1.04112
45	32.26136	1.45636	20.92736	8.98005	0.89758
50	27.74100	1.23172	16.80644	8.94920	0.75363
55	23.36914	1.02687	12.87015	8.85526	0.61685
60	19.18841	0.83890	9.22453	8.63430	0.49070
65	15.28868	0.66828	6.03398	8.20997	0.37646
70	11.76307	0.51719	3.46454	7.50586	0.27548
75	8.74933	0.38985	1.63609	6.53104	0.19235
80	6.32097	0.28834	0.53419	5.36996	0.12849
85	4.53605	0.21545	0.04489	4.19364	0.08207

age ***	initial status of cohort pres mar ●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●				
	total	nev.mar.	pres mar	widowed	divorced
20	56.27260	0.00000	45.36448	9.40850	1.49962
21	55.29153	0.00000	44.38059	9.41156	1.49938
22	54.32372	0.00000	43.40937	9.41657	1.49778
23	53.34481	0.00000	42.43144	9.41927	1.49410
24	52.36858	0.00000	41.45823	9.42205	1.48829
25	51.38967	0.00000	40.48625	9.42399	1.47944
26	50.41634	0.00000	39.52235	9.42649	1.46750
27	49.44011	0.00000	38.55974	9.42788	1.45249
28	48.47200	0.00000	37.60678	9.43024	1.43499
29	47.50070	0.00000	36.65427	9.43144	1.41500
30	46.53084	0.00000	35.70513	9.43230	1.39341
35	41.70985	0.00000	31.01061	9.43359	1.26565
40	36.95692	0.00000	26.40915	9.43165	1.11612
45	32.29173	0.00000	21.91463	9.41774	0.95935
50	27.75773	0.00000	17.57673	9.37715	0.80386
55	23.37634	0.00000	13.44788	9.27137	0.65709
60	19.18394	0.00000	9.63028	9.03151	0.52215
65	15.27624	0.00000	6.29511	8.58083	0.40030
70	11.74738	0.00000	3.61317	7.84136	0.29284
75	8.73517	0.00000	1.70660	6.82402	0.20455
80	6.30888	0.00000	0.55753	5.61460	0.13675
85	4.52616	0.00000	0.04691	4.39174	0.08750

initial status of cohort widowed
****

age	total	nev.mar.	pres mar	widowed	divorced
20	54.29309	0.00000	30.57110	22.72355	0.99844
21	53.29396	0.00000	30.52403	21.77151	0.99842
22	52.29837	0.00000	30.38458	20.91550	0.99829
23	51.65676	0.00000	30.36403	20.28816	1.00457
24	50.90483	0.00000	30.05850	19.68823	1.00809
25	50.27949	0.00000	30.05861	19.20785	1.01302
26	49.54285	0.00000	29.77145	18.75725	1.01415
27	48.74385	0.00000	29.39296	18.33866	1.01222
28	47.83911	0.00000	28.90939	17.92347	1.00625
29	47.00449	0.00000	28.43494	17.56960	0.99995
30	46.08764	0.00000	27.88543	17.21178	0.99043
35	41.35640	0.00000	24.79141	15.64502	0.91996
40	36.71716	0.00000	21.44564	14.44534	0.82617
45	32.10893	0.00000	17.97074	13.41942	0.71876
50	27.62847	0.00000	14.51717	12.50369	0.60760
55	23.28230	0.00000	11.16283	11.61992	0.49956
60	19.11482	0.00000	8.02244	10.69394	0.39844
65	15.22920	0.00000	5.25975	9.66312	0.30633
70	11.71959	0.00000	3.02713	8.46781	0.22465
75	8.72087	0.00000	1.43316	7.13046	0.15726
80	6.30627	0.00000	0.46938	5.73151	0.10538
85	4.52728	0.00000	0.03965	4.42016	0.06748

initial status of cohort divorced
****

age	total	nev.mar.	pres mar	widowed	divorced
20	55.85945	0.00000	40.05873	9.17255	6.62817
21	54.86119	0.00000	39.96707	9.17282	5.72130
22	53.86922	0.00000	39.72236	9.17409	4.97277
23	53.07018	0.00000	39.47111	9.20838	4.39069
24	52.22049	0.00000	39.04870	9.23422	3.93757
25	51.23342	0.00000	38.43938	9.23573	3.55831
26	50.28048	0.00000	37.78473	9.24309	3.25267
27	49.31593	0.00000	37.06001	9.24791	3.00802
28	48.37662	0.00000	36.31312	9.25704	2.80646
29	47.42028	0.00000	35.52356	9.26251	2.63421
30	46.46186	0.00000	34.70662	9.26705	2.48819
35	41.66215	0.00000	30.43179	9.28003	1.95032
40	36.92150	0.00000	26.03456	9.28814	1.59880
45	32.26569	0.00000	21.66014	9.28395	1.32161
50	27.73493	0.00000	17.40059	9.25187	1.08247
55	23.35912	0.00000	13.32917	9.15637	0.87358
60	19.16903	0.00000	9.55245	8.92701	0.68957
65	15.26280	0.00000	6.24773	8.48829	0.52677
70	11.73604	0.00000	3.58804	7.76329	0.38471
75	8.72875	0.00000	1.69637	6.76380	0.26858
80	6.30426	0.00000	0.55473	5.57001	0.17953
85	4.52311	0.00000	0.04676	4.36140	0.11496

D6. Expectations of life by status at age x.

age	status at age x nev.mar.				
	total	nev.mar.	pres mar	widowed	divorced
20	56.11929	5.76334	40.07413	8.92770	1.35412
21	55.12009	6.09164	38.89543	8.81350	1.31952
22	54.09274	7.13517	37.09418	8.60363	1.25975
23	53.05382	8.73732	34.83947	8.29943	1.17760
24	51.98799	11.09056	31.96912	7.86160	1.06671
25	50.90091	13.75723	28.86098	7.33938	0.94331
26	49.81927	16.92624	25.37911	6.70928	0.80463
27	48.75519	19.47837	22.44281	6.14495	0.68907
28	47.68825	21.81458	19.70137	5.58932	0.58298
29	46.63104	23.91446	17.17643	5.05288	0.48726
30	45.61205	25.88678	14.79951	4.52659	0.39918
35	40.71163	30.48615	7.40207	2.66998	0.15343
40	36.06496	30.67422	3.75241	1.58249	0.05584
45	31.66054	28.66016	2.00939	0.96992	0.02106
50	27.37277	25.87070	0.96206	0.53342	0.00659
55	23.18799	22.61582	0.34403	0.22689	0.00125
60	19.25838	19.01025	0.14018	0.10768	0.00027
65	15.53944	15.42163	0.06292	0.05482	0.00007
70	12.09321	12.04877	0.02208	0.02234	0.00002
75	9.05201	9.03177	0.00939	0.01085	0.00000
80	6.57767	6.57547	0.00085	0.00134	0.00000
85	4.73993	4.73994	0.00000	0.00001	0.00000

age	status at age x pres mar				
	total	nev.mar.	pres mar	widowed	divorced
20	56.27259	0.00000	45.36447	9.40850	1.49962
21	55.29293	0.00000	44.39307	9.40812	1.49174
22	54.32791	0.00000	43.44024	9.40704	1.48064
23	53.35042	0.00000	42.48155	9.40297	1.46590
24	52.37518	0.00000	41.53359	9.39937	1.44222
25	51.39898	0.00000	40.59288	9.39396	1.41213
26	50.42870	0.00000	39.67274	9.38562	1.37033
27	49.45583	0.00000	38.75540	9.37505	1.32538
28	48.48961	0.00000	37.84678	9.36518	1.27765
29	47.51972	0.00000	36.93746	9.35557	1.22669
30	46.55211	0.00000	36.03564	9.34237	1.17410
35	41.75026	0.00000	31.57056	9.29836	0.88134
40	37.01463	0.00000	27.19982	9.22107	0.59374
45	32.36457	0.00000	22.94724	9.05791	0.35942
50	27.84960	0.00000	18.88748	8.76283	0.19929
55	23.48168	0.00000	15.09589	8.29792	0.08787
60	19.31574	0.00000	11.69719	7.58110	0.03745
65	15.44144	0.00000	8.77095	6.65614	0.01434
70	11.94306	0.00000	6.36747	5.57050	0.00509
75	8.93656	0.00000	4.41433	4.51888	0.00335
80	6.47452	0.00000	2.83417	3.64035	0.00000
85	4.75473	0.00000	1.53403	3.22070	0.00000

age ... status at age x widowed
••• •••••••••••••••••••••••••

age	total	nev.mar.	pres mar	widowed	divorced
20	54.29309	0.00000	30.57111	22.72354	0.99844
21	53.08365	0.00000	29.06504	23.07251	0.94610
22	51.82505	0.00000	27.34033	23.60134	0.88338
23	51.02370	0.00000	25.83698	24.36151	0.82521
24	50.16636	0.00000	24.52931	24.86396	0.77309
25	49.48185	0.00000	22.56252	26.22651	0.69281
26	48.72471	0.00000	20.63523	27.47527	0.61421
27	47.95197	0.00000	18.97010	28.43506	0.54680
28	46.99339	0.00000	17.28778	29.22521	0.48039
29	46.24792	0.00000	15.91191	29.90989	0.42612
30	45.34191	0.00000	14.74076	30.21974	0.38140
35	40.44917	0.00000	8.88067	31.38722	0.18127
40	35.91860	0.00000	5.06114	30.78098	0.07648
45	31.38816	0.00000	2.61897	28.74201	0.02718
50	27.05649	0.00000	1.29168	25.75615	0.00866
55	22.83158	0.00000	0.52588	22.30371	0.00200
60	18.76466	0.00000	0.19439	18.56986	0.00041
65	14.97894	0.00000	0.06495	14.91391	0.00008
70	11.56336	0.00000	0.01579	11.54756	0.00001
75	8.63808	0.00000	0.00338	8.63470	0.00000
80	6.28604	0.00000	0.00091	6.28513	0.00000
85	4.52892	0.00000	0.00038	4.52854	0.00000

age ... status at age x divorced
••• •••••••••••••••••••••••••

age	total	nev.mar.	pres mar	widowed	divorced
20	55.85945	0.00000	40.05874	9.17255	6.62817
21	54.76270	0.00000	38.95702	9.11866	6.68702
22	53.65837	0.00000	38.01233	9.06362	6.58242
23	52.80737	0.00000	36.64210	9.01446	7.15082
24	52.00611	0.00000	35.57684	8.97828	7.45099
25	50.92450	0.00000	34.40163	8.88866	7.63422
26	49.89399	0.00000	32.84702	8.76533	8.28160
27	48.83745	0.00000	31.27579	8.62308	8.93858
28	47.91322	0.00000	30.02664	8.51222	9.37436
29	46.92552	0.00000	28.54872	8.35675	10.02004
30	45.92563	0.00000	26.91367	8.16599	10.84597
35	40.80638	0.00000	19.91132	7.04842	13.84664
40	35.76185	0.00000	13.37134	5.56842	16.82209
45	30.99289	0.00000	8.60217	4.15131	18.23941
50	26.24849	0.00000	5.00781	2.78418	18.45650
55	21.92453	0.00000	2.36548	1.53546	18.02359
60	17.73795	0.00000	1.00488	0.75470	15.97837
65	13.85969	0.00000	0.37585	0.32623	13.15760
70	10.47576	0.00000	0.12488	0.12799	10.22289
75	7.94444	0.00000	0.06392	0.07471	7.80582
80	5.69797	0.00000	0.00941	0.01477	5.67379
85	4.08042	0.00000	0.00000	0.00006	4.08036

Table 4. Input file for working life table,
Denmark, males, 1972-74.

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inactive  active
  74410.  23081.
0.0007330.0009340.0012020.0013270.0012210.0010160.0009440.0009970.001014
0.0009320.0009010.0009800.0010330.0010390.0010660.0011980.0013190.001284
0.0012600.0013770.0016040.0018540.0020890.0022200.0023310.0025590.002869
0.0033410.0036790.0038750.0041710.0044820.0049000.0054830.0064060.007386
0.0080070.0084110.0089720.0098760.0107480.0118710.0135110.0150830.016280
0.0178900.0206710.0234110.0255970.0282800.0310120.0333970.0362930.039273
0.0424860.0468030.0513220.0557700.061222
0.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.000000
0.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.000000
0.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.000000
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0.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.000000
0.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.000000
0.0000000.0000000.0000000.0000000.000000
0.3390800.6053500.6357300.5571400.4576900.3731700.3454400.3419700.355140
0.3932300.4235200.4497900.4740400.4922600.4993900.4951200.4783000.451480
0.4168800.3793000.3406400.3047500.2744100.2518200.2375000.2306500.229460
0.2318500.2362300.2404500.2428600.2412000.2342700.2216600.2044700.185040
0.1656600.1479600.1329800.1208900.1110100.1032500.0970300.0916300.086830
0.0826000.0785700.0747200.0706500.0657500.0633000.0620500.0538200.043810
0.0449100.0316200.0394700.0233900.030290
0.0007330.0009340.0012020.0013270.0012210.0010160.0009440.0009970.001014
0.0009320.0009010.0009800.0010330.0010390.0010660.0011980.0013190.001284
0.0012600.0013770.0016040.0018540.0020890.0022200.0023310.0025590.002869
0.0033410.0036790.0038750.0041710.0044820.0049000.0054830.0064060.007386
0.0080070.0084110.0089720.0098760.0107480.0118710.0135110.0150830.016280
0.0178900.0206710.0234110.0255970.0282800.0310120.0333970.0362930.039273
0.0424860.0468030.0513220.0557700.061222
0.5256900.1717000.1358500.1219900.0922600.0852000.0806000.0715000.057370
0.0412800.0322500.0241800.0194600.0150900.0120500.0121200.0125300.012780
0.0107400.0093700.0087300.0096600.0103700.0105700.0081900.0086700.009600
0.0105000.0124400.0117100.0122000.0138800.0153700.0175300.0199700.019070
0.0206200.0231100.0260800.0282300.0328400.0363000.0404700.0467000.051160
0.0525100.0579100.0667600.0865700.1096900.1527800.5920000.3107400.387380
0.3885900.2934000.3980300.3569700.440420
0.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.000000
0.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.000000
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0.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.000000
0.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.000000
0.0000000.0000000.0000000.0000000.000000
end
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Table 5. Working life table, Denmark, males, 1973-74.

5A. Occurrency/exposure rates and
transition probabilities.

	age-specific rates			transition probabilities			
age	mortality	1 to 2	2 to 1	1 to 1	1 to 2	2 to 1	2 to 2
16	0.000733	0.339080	0.525690	0.762690	0.236577	0.366775	0.632492
17	0.000934	0.605350	0.171700	0.563450	0.435616	0.123557	0.875509
18	0.001202	0.635730	0.135850	0.540524	0.458275	0.097929	0.900869
19	0.001327	0.557140	0.121990	0.583244	0.415430	0.090961	0.907712
20	0.001221	0.457690	0.092260	0.640191	0.358589	0.072283	0.926496
21	0.001016	0.373170	0.085200	0.695673	0.303312	0.069250	0.929734
22	0.000944	0.345440	0.080600	0.714525	0.284532	0.066389	0.932668
23	0.000997	0.341970	0.071500	0.715877	0.283126	0.059197	0.939807
24	0.001014	0.355140	0.057370	0.704844	0.294143	0.047516	0.951470
25	0.000932	0.393230	0.041280	0.676296	0.322773	0.033884	0.965185
26	0.000901	0.423520	0.032250	0.654463	0.344637	0.026243	0.972856
27	0.000980	0.449790	0.024180	0.635724	0.363296	0.019530	0.979490
28	0.001033	0.474040	0.019460	0.619101	0.379867	0.015594	0.983373
29	0.001039	0.492260	0.015090	0.606674	0.392287	0.012025	0.986936
30	0.001066	0.499390	0.012050	0.601623	0.397312	0.009587	0.989348
31	0.001198	0.495120	0.012120	0.604275	0.394527	0.009658	0.989145
32	0.001319	0.478300	0.012530	0.615089	0.383592	0.010049	0.988633
33	0.001284	0.451480	0.012780	0.632720	0.365997	0.010360	0.988357
34	0.001260	0.416880	0.010740	0.655688	0.343053	0.008838	0.989903
35	0.001377	0.379300	0.009370	0.681443	0.317181	0.007835	0.990789
36	0.001604	0.340640	0.008730	0.708843	0.289554	0.007421	0.990976
37	0.001854	0.304750	0.009660	0.735252	0.262896	0.008333	0.989814
38	0.002089	0.274410	0.010370	0.758176	0.239737	0.009060	0.988853
39	0.002220	0.251820	0.010570	0.775633	0.222149	0.009325	0.988458
40	0.002331	0.237500	0.008190	0.786621	0.211051	0.007278	0.990394
41	0.002559	0.230650	0.008670	0.791942	0.205502	0.007725	0.989720
42	0.002869	0.229460	0.009600	0.792730	0.204406	0.008552	0.988583
43	0.003341	0.231850	0.010500	0.790525	0.206140	0.009336	0.987329
44	0.003679	0.236230	0.012440	0.786950	0.209378	0.011026	0.985302
45	0.003875	0.240450	0.011710	0.783383	0.212749	0.010361	0.985772
46	0.004171	0.242860	0.012200	0.781292	0.214546	0.010778	0.985060
47	0.004482	0.241200	0.013880	0.782513	0.213015	0.012258	0.983270
48	0.004900	0.234270	0.015370	0.787799	0.207313	0.013601	0.981511
49	0.005483	0.221660	0.017530	0.797573	0.196959	0.015576	0.978955
50	0.006406	0.204470	0.019970	0.810888	0.182726	0.017846	0.975768
51	0.007386	0.185040	0.019070	0.825913	0.166728	0.017183	0.975458
52	0.008007	0.165660	0.020620	0.841635	0.150390	0.018719	0.973306
53	0.008411	0.147960	0.023110	0.856417	0.135207	0.021118	0.970506
54	0.008972	0.132980	0.026080	0.868942	0.122126	0.023951	0.967117
55	0.009876	0.120890	0.028230	0.878736	0.111437	0.026023	0.964150
56	0.010748	0.111010	0.032840	0.886815	0.102494	0.030321	0.958989
57	0.011871	0.103250	0.036300	0.892782	0.095417	0.033546	0.954653
58	0.013511	0.097030	0.040470	0.896967	0.089613	0.037376	0.949203
59	0.015083	0.091630	0.046700	0.900565	0.084465	0.043048	0.941982
60	0.016280	0.086830	0.051160	0.903890	0.079961	0.047113	0.936738
61	0.017890	0.082600	0.052510	9.906219	0.076050	0.048346	0.933923
62	0.020671	0.078570	0.057910	0.907440	0.072101	0.053142	0.926399
63	0.023411	0.074720	0.066760	0.908630	0.068230	0.060962	0.915898
64	0.025597	0.070650	0.086570	0.910812	0.063915	0.078317	0.896409
65	0.028280	0.065750	0.109690	0.913275	0.058840	0.098162	0.873953
66	0.031012	0.063300	0.152780	0.913982	0.055479	0.133904	0.835558
67	0.033397	0.062050	0.592000	0.921732	0.045419	0.433331	0.533821
68	0.036293	0.053820	0.310740	0.920319	0.044035	0.254244	0.710109
69	0.039273	0.043810	0.387380	0.926699	0.034784	0.307570	0.653914
70	0.042486	0.044910	0.388590	0.922876	0.035522	0.307358	0.651040
71	0.046803	0.031620	0.293400	0.928214	0.026053	0.241747	0.712520
72	0.051322	0.039470	0.398030	0.919038	0.030924	0.311852	0.638110
73	0.055770	0.023390	0.356970	0.927061	0.018682	0.285113	0.660630
74	0.061222	0.030290	0.440420	0.917381	0.023216	0.337559	0.603037

5B. Population-based life table statistics.

B1. Life history of initial cohort.

age	deaths inactive	deaths active	transitions 1 to 1	2 to 1	1 to 2	2 to 2	number of people at exact age x inactive	active	total
16	71.	0.	74410.	0.	23081.	0.	97562.	0.	97562.
17	69.	22.	41926.	2852.	32414.	20208.	74410.	23081.	97491.
18	54.	63.	24204.	5153.	20521.	47405.	44778.	52622.	97399.
19	39.	90.	17122.	6179.	12196.	61657.	29357.	67926.	97282.
20	28.	90.	14917.	5338.	8355.	68424.	23301.	73853.	97153.
21	21.	78.	14091.	5317.	6144.	71385.	20255.	76780.	97035.
22	18.	73.	13868.	5147.	5522.	72308.	19408.	77528.	96936.
23	19.	78.	13612.	4607.	5384.	73146.	19015.	77830.	96845.
24	18.	80.	12842.	3731.	5359.	74718.	18219.	78529.	96748.
25	15.	75.	11208.	2713.	5349.	77289.	16573.	80077.	96650.
26	13.	74.	9111.	2169.	4798.	80395.	13922.	82639.	96560.
27	11.	83.	7171.	1664.	4098.	83446.	11280.	85193.	96473.
28	9.	90.	5470.	1365.	3356.	86089.	8835.	87544.	96379.
29	7.	93.	4146.	1076.	2681.	88276.	6835.	89445.	96279.
30	6.	97.	3142.	872.	2075.	89988.	5222.	90957.	96179.
31	5.	110.	2425.	889.	1584.	91064.	4014.	92063.	96077.
32	4.	122.	2039.	931.	1271.	91594.	3315.	92647.	95962.
33	4.	119.	1879.	962.	1087.	91784.	2970.	92866.	95835.
34	4.	117.	1863.	821.	975.	91934.	2841.	92871.	95712.
35	4.	128.	1829.	728.	851.	92052.	2684.	92908.	95592.
36	4.	149.	1812.	689.	740.	92065.	2557.	92904.	95460.
37	5.	172.	1839.	773.	658.	91860.	2502.	92806.	95307.
38	5.	193.	1981.	838.	626.	91487.	2613.	92518.	95131.
39	6.	204.	2187.	859.	626.	91050.	2819.	92113.	94932.
40	7.	213.	2396.	667.	643.	90796.	3046.	91676.	94722.
41	8.	234.	2426.	706.	629.	90498.	3063.	91438.	94501.
42	9.	261.	2483.	779.	640.	90087.	3132.	91128.	94260.
43	11.	303.	2579.	847.	672.	89578.	3262.	90728.	93990.
44	13.	331.	2696.	995.	717.	88924.	3426.	90250.	93676.
45	14.	347.	2891.	929.	785.	88366.	3691.	89641.	93332.
46	16.	371.	2985.	961.	820.	87819.	3820.	89151.	92971.
47	18.	396.	3087.	1087.	840.	87156.	3946.	88639.	92584.
48	20.	430.	3288.	1197.	865.	86369.	4174.	87996.	92170.
49	25.	477.	3577.	1359.	883.	85399.	4485.	87235.	91720.
50	32.	551.	4003.	1540.	902.	84191.	4936.	86282.	91218.
51	41.	626.	4578.	1462.	924.	83005.	5542.	85093.	90636.
52	48.	669.	5083.	1571.	908.	81689.	6040.	83929.	89969.
53	56.	692.	5699.	1744.	900.	80161.	6654.	82597.	89251.
54	66.	724.	6468.	1942.	909.	78395.	7443.	81061.	88504.
55	83.	779.	7389.	2064.	937.	76461.	8409.	79304.	87713.
56	101.	827.	8383.	2347.	969.	74224.	9453.	77398.	86851.
57	127.	887.	9580.	2522.	1024.	71783.	10730.	75193.	85923.
58	162.	977.	10855.	2721.	1084.	69108.	12102.	72807.	84909.
59	203.	1051.	12226.	3022.	1147.	66120.	13576.	70193.	83769.
60	246.	1086.	13783.	3169.	1219.	63012.	15248.	67267.	82515.
61	301.	1139.	15362.	3105.	1289.	59987.	16952.	64231.	81183.
62	378.	1254.	16758.	3256.	1332.	56766.	18467.	61276.	79743.
63	463.	1344.	18186.	3542.	1366.	53211.	20014.	58097.	78112.
64	549.	1379.	19789.	4274.	1389.	48923.	21727.	54577.	76304.
65	671.	1403.	21977.	4939.	1416.	43970.	24064.	50312.	74376.
66	822.	1386.	24600.	6077.	1493.	37923.	26916.	45386.	72302.
67	1008.	1295.	28277.	17080.	1393.	21041.	30678.	39416.	70094.
68	1617.	800.	41743.	5704.	1997.	15931.	45357.	22434.	67791.
69	1827.	691.	43969.	5514.	1650.	11723.	47447.	17928.	65375.
70	2059.	556.	45667.	4111.	1758.	8707.	49483.	13374.	62857.
71	2276.	479.	46204.	2530.	1297.	7456.	49777.	10465.	60242.
72	2439.	438.	44788.	2730.	1507.	5585.	48734.	8753.	57487.
73	2578.	385.	44052.	2022.	888.	4686.	47518.	7093.	54610.
74	2737.	331.	42267.	1881.	1070.	3361.	46074.	5573.	51647.

B2. Expected number of years lived.

age	within age interval x to x+1			life expectancy at age x		
	inactive	active	total	inactive	active	total
16	0.881345	0.118288	0.999634	10.638993	42.002384	52.641376
17	0.610830	0.387971	0.998801	9.764805	41.914810	51.679615
18	0.379936	0.617799	0.997735	9.162082	41.565357	50.727440
19	0.269867	0.726607	0.996474	8.792074	40.995777	49.787853
20	0.223222	0.771983	0.995205	8.532747	40.320553	48.853302
21	0.203272	0.790820	0.994092	8.318737	39.593636	47.912373
22	0.196914	0.796205	0.993119	8.122608	38.837959	46.960567
23	0.190822	0.801334	0.992155	7.931907	38.072536	46.004444
24	0.178310	0.812848	0.991158	7.747392	37.302444	45.049835
25	0.156285	0.833909	0.990194	7.575260	36.519775	44.095036
26	0.129157	0.860130	0.989287	7.424417	35.711269	43.135685
27	0.103087	0.885270	0.988357	7.300494	34.873619	42.174114
28	0.080306	0.907057	0.987363	7.203300	34.011677	41.214977
29	0.061791	0.924550	0.986341	7.129369	33.127686	40.257053
30	0.047333	0.937970	0.985303	7.074100	32.224277	39.298378'
31	0.037557	0.946632	0.984189	7.033580	31.306179	38.339760
32	0.032206	0.950744	0.982951	7.003828	30.381289	37.385117
33	0.029780	0.951892	0.981672	6.980286	29.453516	36.433804
34	0.028314	0.952110	0.980424	6.958899	28.521072	35.479973
35	0.026857	0.952276	0.979133	6.938776	27.585300	34.524075
36	0.025925	0.951750	0.977674	6.920887	26.650064	33.570950
37	0.026212	0.949774	0.975986	6.905460	25.718584	32.624043
38	0.027838	0.946225	0.974063	6.891392	24.792261	31.683653
39	0.030056	0.941911	0.971967	6.877194	23.871672	30.748867
40	0.031305	0.938453	0.969758	6.861522	22.954573	29.816095
41	0.031748	0.935642	0.967390	6.845214	22.039293	28.884508
42	0.032769	0.931999	0.964768	6.829892	21.127338	27.957232
43	0.034275	0.927503	0.961778	6.815501	20.220619	27.036121
44	0.036473	0.921935	0.958408	6.802613	19.322315	26.124929
45	0.038495	0.916300	0.954795	6.789560	18.429815	25.219376
46	0.039799	0.911163	0.950962	6.775525	17.539825	24.315351
47	0.041612	0.905245	0.946857	6.761905	16.652985	23.414890
48	0.044378	0.898048	0.942426	6.748233	15.769593	22.517826
49	0.048283	0.889264	0.937547	6.734178	14.891803	21.625980
50	0.053701	0.878290	0.931991	6.719562	14.022572	20.742134
51	0.059358	0.866230	0.925588	6.704940	13.167280	19.872221
52	0.065056	0.853437	0.918493	6.690279	12.325555	19.015835
53	0.072249	0.838736	0.910984	6.672950	11.491737	18.164688
54	0.081242	0.821860	0.903102	6.649669	10.664223	17.313892
55	0.091543	0.803089	0.894633	6.619235	9.846191	16.465427
56	0.103437	0.782020	0.885457	6.582098	9.041784	15.623882
57	0.117012	0.758490	0.875502	6.535774	8.251535	14.787310
58	0.131599	0.732866	0.864465	6.479374	7.478553	13.957928
59	0.147723	0.704476	0.852199	6.414245	6.726749	13.140995
60	0.165022	0.673921	0.838943	6.337065	5.996040	12.333105
61	0.181520	0.643216	0.824736	6.242764	5.284567	11.527332
62	0.197215	0.611782	0.808998	6.133374	4.593017	10.726391
63	0.213923	0.577450	0.791373	6.015158	3.924831	9.939989
64	0.234676	0.537550	0.772226	5.884126	3.279479	9.163605
65	0.261266	0.490448	0.751714	5.728859	2.659383	8.388243
66	0.295162	0.434607	0.729769	5.540649	2.073871	7.614521
67	0.389673	0.316980	0.706653	5.304353	1.534279	6.838632
68	0.475612	0.206856	0.682468	4.923712	1.130206	6.053918
69	0.496758	0.160421	0.657179	4.395931	0.863281	5.259212
70	0.508702	0.122171	0.630873	3.800996	0.648868	4.449863
71	0.504862	0.098490	0.603352	3.142143	0.479177	3.621320
72	0.493283	0.081208	0.574491	2.435916	0.334992	2.770907
73	0.479652	0.064911	0.544563	1.682967	0.207557	1.890524
74	0.462386	0.051269	0.513655	0.873451	0.096847	0.970298

5C. Status-based life table statistics.

C1. Life history of initial cohort: inactive.

age	deaths		transitions				number of people at exact age x		
	inactive	active	1 to 1	2 to 1	1 to 2	2 to 2	inactive	active	total
17	69.	0.	41926.	0.	32414.	0.	74410.	0.	74410.
18	50.	39.	22662.	3174.	19214.	29201.	41926.	32414.	74341.
19	34.	64.	15069.	4404.	10733.	43947.	25836.	48415.	74251.
20	24.	67.	12466.	3952.	6983.	50661.	19473.	54680.	74153.
21	17.	59.	11422.	3992.	4980.	53593.	16419.	57643.	74062.
22	15.	55.	11014.	3889.	4386.	54629.	15414.	58573.	73987.
23	15.	59.	10668.	3494.	4219.	55463.	14902.	59015.	73917.
24	14.	60.	9982.	2836.	4166.	56786.	14162.	59682.	73844.
25	12.	57.	8669.	2065.	4137.	58829.	12818.	60951.	73769.
26	10.	57.	7025.	1652.	3699.	61257.	10734.	62966.	73700.
27	8.	64.	5516.	1269.	3152.	63624.	8677.	64956.	73634.
28	7.	69.	4201.	1041.	2577.	65666.	6785.	66777.	73562.
29	5.	71.	3180.	821.	2056.	67352.	5242.	68244.	73486.
30	4.	74.	2407.	665.	1590.	68669.	4001.	69409.	73409.
31	4.	84.	1857.	679.	1212.	69496.	3072.	70259.	73331.
32	3.	93.	1559.	711.	972.	69904.	2535.	70708.	73243.
33	3.	91.	1436.	734.	831.	70052.	2270.	70877.	73147.
34	3.	89.	1423.	626.	745.	70167.	2170.	70882.	73053.
35	3.	98.	1397.	556.	650.	70258.	2050.	70911.	72961.
36	3.	114.	1384.	526.	565.	70268.	1952.	70908.	72861.
37	4.	131.	1404.	590.	502.	70112.	1910.	70834.	72744.
38	4.	147.	1512.	640.	478.	69827.	1995.	70614.	72609.
39	5.	156.	1669.	656.	478.	69494.	2152.	70305.	72457.
40	5.	163.	1829.	509.	491.	69300.	2325.	69972.	72297.
41	6.	178.	1852.	539.	480.	69073.	2338.	69790.	72128.
42	7.	199.	1895.	595.	489.	68759.	2391.	69553.	71944.
43	8.	231.	1968.	646.	513.	68371.	2490.	69248.	71738.
44	10.	253.	2058.	760.	547.	67871.	2615.	68884.	71499.
45	11.	265.	2207.	709.	599.	67445.	2817.	68419.	71236.
46	12.	283.	2278.	733.	626.	67028.	2916.	68045.	70961.
47	13.	303.	2357.	829.	641.	66522.	3012.	67654.	70665.
48	16.	328.	2510.	914.	660.	65922.	3186.	67163.	70349.
49	19.	364.	2730.	1037.	674.	65181.	3423.	66582.	70005.
50	24.	421.	3055.	1175.	688.	64259.	3767.	65855.	69623.
51	31.	478.	3494.	1116.	705.	63354.	4230.	64948.	69178.
52	37.	511.	3880.	1199.	693.	62349.	4610.	64059.	68669.
53	43.	528.	4350.	1331.	687.	61183.	5079.	63042.	68121.
54	51.	553.	4936.	1482.	694.	59835.	5681.	61870.	67551.
55	63.	595.	5640.	1575.	715.	58359.	6418.	60529.	66947.
56	77.	632.	6398.	1791.	740.	56652.	7215.	59074.	66289.
57	97.	677.	7312.	1925.	781.	54789.	8190.	57391.	65581.
58	124.	746.	8285.	2077.	828.	52747.	9237.	55570.	64807.
59	155.	802.	9332.	2306.	875.	50467.	10362.	53575.	63937.
60	188.	829.	10520.	2419.	931.	48094.	11638.	51342.	62980.
61	229.	869.	11725.	2370.	984.	45785.	12938.	49025.	61963.
62	288.	957.	12791.	2485.	1016.	43327.	14095.	46769.	60864.
63	353.	1026.	13880.	2703.	1042.	40614.	15276.	44343.	59619.
64	419.	1053.	15104.	3262.	1060.	37341.	16583.	41656.	58239.
65	512.	1071.	16774.	3769.	1081.	33560.	18367.	38401.	56768.
66	627.	1058.	18776.	4639.	1140.	28945.	20543.	34641.	55185.
67	769.	988.	21582.	13037.	1063.	16060.	23415.	30084.	53499.
68	1234.	610.	31860.	4353.	1524.	12159.	34619.	17123.	51742.
69	1395.	527.	33559.	4209.	1260.	8948.	36214.	13684.	49898.
70	1571.	425.	34855.	3137.	1342.	6646.	37768.	10208.	47976.
71	1738.	365.	35265.	1931.	990.	5691.	37993.	7987.	45980.
72	1861.	334.	34185.	2083.	1150.	4263.	37196.	6681.	43877.
73	1968.	294.	33623.	1543.	678.	3576.	36268.	5413.	41681.
74	2089.	253.	32261.	1436.	816.	2565.	35166.	4254.	39420.

C2. Expected number of years lived: inactive.

age	within age interval x to x+1			life expectancy at age x		
	inactive	active	total	inactive	active	total
17	0.781725	0.217808	0.999533	10.091781	41.587830	51.679611
18	0.455334	0.543132	0.998466	9.318753	41.408676	50.727428
19	0.304457	0.692747	0.997205	8.873655	40.914196	49.787853
20	0.241175	0.754760	0.995935	8.579926	40.273373	48.853298
21	0.213901	0.780921	0.994822	8.348099	39.564270	47.912369
22	0.203710	0.790137	0.993847	8.141461	38.819099	46.960560
23	0.195296	0.797587	0.992883	7.944082	38.060364	46.004448
24	0.181288	0.810597	0.991885	7.755213	37.294624	45.049839
25	0.158254	0.832666	0.990921	7.580217	36.514816	44.095032
26	0.130433	0.859580	0.990013	7.427505	35.708172	43.135677
27	0.103899	0.885183	0.989082	7.302391	34.871712	42.174103
28	0.080815	0.907272	0.988087	7.204453	34.010513	41.214966
29	0.062106	0.924958	0.987064	7.130069	33.126984	40.257053
30	0.047528	0.938498	0.986026	7.074527	32.223846	39.298374
31	0.037680	0.947231	0.984911	7.033845	31.305910	38.339756
32	0.032287	0.951385	0.983672	7.003996	30.381111	37.385109
33	0.029837	0.952555	0.982392	6.980397	29.453402	36.433800
34	0.028357	0.952787	0.981144	6.958973	28.520988	35.479961
35	0.026891	0.952960	0.979851	6.938828	27.585239	34.524067
36	0.025954	0.952438	0.978392	6.920925	26.650021	33.570946
37	0.026238	0.950463	0.976701	6.905488	25.718550	32.624039
38	0.027864	0.946914	0.974778	6.891413	24.792234	31.683647
39	0.030082	0.942598	0.972680	6.877210	23.871653	30.748863
40	0.031331	0.939138	0.970469	6.861533	22.954556	29.816090
41	0.031774	0.936325	0.968100	6.845223	22.039280	28.884504
42	0.032795	0.932681	0.965476	6.829900	21.127329	27.957230
43	0.034302	0.928181	0.962483	6.815506	20.220615	27.036121
44	0.036501	0.922610	0.959111	6.802617	19.322313	26.124931
45	0.038524	0.916971	0.955495	6.789563	18.429813	25.219376
46	0.039829	0.911830	0.951659	6.775526	17.539822	24.315348
47	0.041643	0.905908	0.947551	6.761907	16.652983	23.414890
48	0.044411	0.898707	0.943117	6.748235	15.769592	22.517828
49	0.048319	0.889916	0.938234	6.734177	14.891801	21.625978
50	0.053741	0.878934	0.932675	6.719561	14.022569	20.742130
51	0.059401	0.866865	0.926267	6.704940	13.167278	19.872219
52	0.065104	0.854062	0.919166	6.690279	12.325554	19.015833
53	0.072302	0.839350	0.911652	6.672949	11.491735	18.164684
54	0.081302	0.822462	0.903764	6.649669	10.664221	17.313890
55	0.091610	0.803678	0.895289	6.619234	9.846190	16.465425
56	0.103513	0.782593	0.886106	6.582097	9.041783	15.623880
57	0.117098	0.759046	0.876144	6.535774	8.251534	14.787309
58	0.131696	0.733403	0.865099	6.479373	7.478553	13.957927
59	0.147831	0.704992	0.852823	6.414245	6.726748	13.140993
60	0.165143	0.674415	0.839558	6.337066	5.996041	12.333107
61	0.181653	0.643688	0.825341	6.242764	5.284567	11.527331
62	0.197360	0.612231	0.809591	6.133374	4.593018	10.726392
63	0.214080	0.577874	0.791953	6.015157	3.924831	9.939988
64	0.234848	0.537944	0.772792	5.884126	3.279479	9.163605
65	0.261457	0.490807	0.752265	5.728858	2.659383	8.388241
66	0.295378	0.434925	0.730304	5.540649	2.073871	7.614521
67	0.389958	0.317213	0.707171	5.304353	1.534279	6.838632
68	0.475961	0.207008	0.682969	4.923711	1.130206	6.053917
69	0.497122	0.160539	0.657661	4.395930	0.863281	5.259211
70	0.509075	0.122261	0.631335	3.800995	0.648868	4.449863
71	0.505232	0.098562	0.603794	3.142143	0.479177	3.621320
72	0.493644	0.081268	0.574912	2.435916	0.334992	2.770908
73	0.480004	0.064959	0.544963	1.682967	0.207557	1.890524
74	0.462725	0.051306	0.514031	0.873451	0.096847	0.970298

C3. Life history of initial cohort: active.

age	deaths inactive	deaths active	transitions 1 to 1	transitions 2 to 1	transitions 1 to 2	transitions 2 to 2	number of people at exact age x inactive	number of people at exact age x active	number of people at exact age x total
17	0.	22.	0.	2852.	0.	20208.	0.	23081.	23081.
18	3.	24.	1541.	1979.	1307.	18204.	2852.	20208.	23059.
19	5.	26.	2053.	1775.	1462.	17711.	3520.	19511.	23032.
20	5.	23.	2451.	1386.	1373.	17764.	3828.	19173.	23001.
21	4.	19.	2669.	1325.	1164.	17792.	3837.	19137.	22973.
22	4.	18.	2854.	1258.	1136.	17679.	3994.	18956.	22950.
23	4.	19.	2944.	1114.	1164.	17683.	4112.	18816.	22928.
24	4.	19.	2860.	896.	1194.	17933.	4058.	18848.	22905.
25	3.	18.	2540.	648.	1212.	18461.	3756.	19126.	22882.
26	3.	18.	2086.	516.	1099.	19139.	3188.	19673.	22861.
27	3.	20.	1655.	395.	946.	19822.	2603.	20237.	22840.
28	2.	21.	1269.	324.	779.	20423.	2050.	20768.	22818.
29	2.	22.	966.	255.	625.	20924.	1593.	21201.	22794.
30	1.	23.	735.	207.	485.	21320.	1221.	21549.	22771.
31	1.	26.	569.	211.	371.	21568.	941.	21805.	22746.
32	1.	29.	479.	220.	299.	21690.	779.	21940.	22719.
33	1.	28.	443.	228.	256.	21733.	700.	21989.	22689.
34	1.	28.	440.	194.	230.	21767.	671.	21989.	22660.
35	1.	30.	432.	172.	201.	21795.	634.	21997.	22632.
36	1.	35.	428.	163.	175.	21797.	604.	21996.	22600.
37	1.	41.	435.	183.	156.	21749.	592.	21972.	22564.
38	1.	46.	469.	198.	148.	21660.	618.	21904.	22522.
39	1.	48.	517.	203.	148.	21557.	667.	21808.	22475.
40	2.	51.	567.	158.	152.	21496.	721.	21705.	22426.
41	2.	55.	574.	167.	149.	21426.	725.	21648.	22373.
42	2.	62.	588.	185.	152.	21328.	741.	21575.	22316.
43	3.	72.	610.	201.	159.	21208.	772.	21480.	22252.
44	3.	78.	638.	236.	170.	21053.	811.	21367.	22178.
45	3.	82.	685.	220.	186.	20921.	874.	21223.	22097.
46	4.	88.	707.	227.	194.	20791.	904.	21107.	22011.
47	4.	94.	731.	257.	199.	20634.	934.	20985.	21919.
48	5.	102.	778.	283.	205.	20448.	988.	20833.	21821.
49	6.	113.	847.	322.	209.	20218.	1062.	20653.	21715.
50	7.	130.	948.	365.	214.	19932.	1169.	20427.	21596.
51	10.	148.	1084.	346.	219.	19652.	1312.	20146.	21458.
52	11.	158.	1203.	372.	215.	19340.	1430.	19870.	21300.
53	13.	164.	1349.	413.	213.	18978.	1575.	19555.	21130.
54	16.	171.	1531.	460.	215.	18560.	1762.	19191.	20953.
55	20.	185.	1749.	489.	222.	18102.	1991.	18775.	20766.
56	24.	196.	1985.	556.	229.	17573.	2238.	18324.	20562.
57	30.	210.	2268.	597.	242.	16995.	2540.	17802.	20342.
58	38.	231.	2570.	644.	257.	16362.	2865.	17237.	20102.
59	48.	249.	2895.	715.	271.	15654.	3214.	16618.	19832.
60	58.	257.	3263.	750.	289.	14918.	3610.	15926.	19536.
61	71.	270.	3637.	735.	305.	14202.	4013.	15207.	19220.
62	89.	297.	3967.	771.	315.	13439.	4372.	14507.	18879.
63	110.	318.	4305.	839.	323.	12598.	4738.	13755.	18493.
64	130.	327.	4685.	1012.	329.	11583.	5144.	12921.	18065.
65	159.	332.	5203.	1169.	335.	10410.	5697.	11911.	17609.
66	195.	328.	5824.	1439.	354.	8978.	6372.	10745.	17118.
67	239.	307.	6695.	4044.	330.	4982.	7263.	9332.	16595.
68	383.	189.	9883.	1350.	473.	3772.	10738.	5311.	16050.
69	433.	163.	10410.	1305.	391.	2776.	11233.	4245.	15478.
70	487.	132.	10812.	973.	416.	2061.	11715.	3166.	14881.
71	539.	113.	10939.	599.	307.	1765.	11785.	2478.	14262.
72	577.	104.	10604.	646.	357.	1322.	11538.	2072.	13610.
73	610.	91.	10429.	479.	210.	1109.	11250.	1679.	12929.
74	648.	78.	10007.	445.	253.	796.	10908.	1319.	12228.

C4. Expected number of years lived: active.

age	within age interval x to x+1			life expectancy at age x		
	inactive	active	total	inactive	active	total
17	0.061779	0.937755	0.999533	8.710670	42.968941	51.679611
18	0.138040	0.860426	0.998466	8.656975	42.070465	50.727440
19	0.159188	0.838017	0.997205	8.529051	41.258797	49.787849
20	0.166037	0.829898	0.995935	8.380636	40.472656	48.853294
21	0.169637	0.825184	0.994822	8.224059	39.688313	47.912373
22	0.175612	0.818235	0.993847	8.061812	38.898754	46.960567
23	0.176990	0.815893	0.992883	7.892642	38.111805	46.004448
24	0.169262	0.822623	0.991885	7.722168	37.327667	45.049835
25	0.150421	0.840500	0.990921	7.559268	36.535763	44.095032
26	0.125444	0.864569	0.990013	7.414447	35.721233	43.135681
27	0.100788	0.888294	0.989082	7.294363	34.879749	42.174114
28	0.078913	0.909174	0.988087	7.199564	34.015408	41.214973
29	0.060965	0.926099	0.987064	7.127100	33.129955	40.257057
30	0.046851	0.939175	0.986026	7.072713	32.225666	39.298378
31	0.037278	0.947633	0.984910	7.032717	31.307039	38.339756
32	0.032046	0.951625	0.983672	7.003275	30.381842	37.385117
33	0.029690	0.952702	0.982392	6.979918	29.453878	36.433796
34	0.028264	0.952879	0.981143	6.958645	28.521320	35.479965
35	0.026830	0.953021	0.979851	6.938593	27.585474	34.524067
36	0.025912	0.952480	0.978391	6.920753	26.650194	33.570946
37	0.026208	0.950493	0.976701	6.905358	25.718683	32.624043
38	0.027842	0.946936	0.974778	6.891315	24.792337	31.683653
39	0.030066	0.942614	0.972680	6.877133	23.871731	30.748863
40	0.031319	0.939151	0.970469	6.861473	22.954617	29.816090
41	0.031764	0.936335	0.968099	6.845177	22.039330	28.884506
42	0.032787	0.932688	0.965476	6.829863	21.127371	27.957233
43	0.034296	0.928187	0.962483	6.815478	20.220646	27.036123
44	0.036496	0.922615	0.959111	6.802594	19.322332	26.124928
45	0.038520	0.916975	0.955495	6.789544	18.429831	25.219376
46	0.039826	0.911833	0.951659	6.775512	17.539835	24.315348
47	0.041641	0.905910	0.947551	6.761895	16.652992	23.414888
48	0.044409	0.898708	0.943117	6.748225	15.769598	22.517822
49	0.048317	0.889917	0.938234	6.734170	14.891807	21.625977
50	0.053740	0.878935	0.932675	6.719555	14.022574	20.742130
51	0.059400	0.866866	0.926267	6.704935	13.167283	19.872219
52	0.065103	0.854063	0.919166	6.690275	12.325557	19.015831
53	0.072301	0.839351	0.911652	6.672946	11.491737	18.164684
54	0.081301	0.822462	0.903764	6.649667	10.664224	17.313890
55	0.091610	0.803679	0.895289	6.619233	9.846192	16.465425
56	0.103513	0.782593	0.886106	6.582096	9.041783	15.623879
57	0.117098	0.759046	0.876144	6.535773	8.251537	14.787311
58	0.131696	0.733403	0.865099	6.479374	7.478555	13.957929
59	0.147831	0.704992	0.852823	6.414244	6.726749	13.140993
60	0.165142	0.674415	0.839558	6.337064	5.996042	12.333106
61	0.181653	0.643688	0.825341	6.242763	5.284568	11.527330
62	0.197360	0.612231	0.809591	6.133373	4.593017	10.726391
63	0.214079	0.577874	0.791953	6.015157	3.924831	9.939988
64	0.234848	0.537944	0.772792	5.884126	3.279479	9.163605
65	0.261457	0.490807	0.752265	5.728859	2.659383	8.388242
66	0.295378	0.434925	0.730304	5.540649	2.073871	7.614521
67	0.389958	0.317213	0.707171	5.304353	1.534279	6.838632
68	0.475961	0.207008	0.682969	4.923712	1.130206	6.053918
69	0.497122	0.160539	0.657661	4.395931	0.863281	5.259212
70	0.509075	0.122261	0.631335	3.800995	0.648868	4.449863
71	0.505232	0.098562	0.603794	3.142143	0.479177	3.621320
72	0.493644	0.081268	0.574912	2.435916	0.334992	2.770908
73	0.480004	0.064959	0.544963	1.682967	0.207557	1.890524
74	0.462725	0.051306	0.514031	0.873451	0.096847	0.970298

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