

Exercise 1

You are completing a mortality study which begins on 1/1/2012 and ends on 12/31/2018. You will give calculate the seriatim exposure exactly as is done in Section 4.3.1 of Experience Studies Calculations. For your calculations, we want calculate the exposure for ages 50, 51, and 52.

You are given the following ten lives:

- Life A was born on 3/28/1961, is alive on 1/1/2012 and is still alive on 12/31/2018
- Life B was born on 11/29/1960. She is alive on 1/1/2012 but dies on 2/13/2013
- Life C was born on 7/4/1962, is alive on 1/1/2012 but withdraws from the study on 8/15/2015
- Life D was born on 5/30/1961, is alive on 1/1/2012 but withdraws on 4/4/2014
- Life E was born on 9/15/1961 and died on 12/18/2011
- Life F was born on 10/25/1961, is alive on 1/1/2012 but dies on 1/2/2012
- Life G is born on 5/31/1967, is alive on 1/1/2012 and is still alive at 12/31/2018
- Life H is born on 6/5/1967, is alive on 1/1/2012 but dies on 10/15/2018
- Life I is born on 2/14/1966, is alive on 1/1/2012 but dies on 1/15/2019
- Life J is born on 4/1/1966, is alive on 1/1/2012 but dies on 3/20/2016

Complete the following table showing the number of days of exposure that each live will contribute to this study for ages 50, 51, and 52:

	Age 50	Age 51	Age 52
Life A			
Life B			
Life C			
Life D			
Life E			
Life F			
Life G			
Life H			
Life I			
Life J			

Complete the following table showing the number of years of exposure that each live will contribute to this study for ages 50, 51, and 52:

	Age 50	Age 51	Age 52
Life A			
Life B			
Life C			
Life D			
Life E			
Life F			
Life G			
Life H			
Life I			
Life J			

Complete this table:

Age	E_x	d_x	q_x	p_x
50				
51				
52				

Explain why the results of our table are volatile.

The following table indicates the amount of insurance that each life had.

Life	Amount (B _x)	Life	Amount (B _x)
A	10,000	F	5,000
B	25,000	G	13,000
C	15,000	H	20,000
D	12,000	I	22,000
E	7,000	J	18,000

Calculate the following table using Individual Amount Weights as done in Section 4.4.1.

Age	E_x	d_x	q_x	p_x
50				
51				
52				