1. *You are given the following information about three policyholders:

Age at policy purchase	Age at policy termination	Reason for policy termination	Exposure e_{75}
74.0	75.8	Death	0.8
75.0	76.5	Death	1.0
75.5	75.9	Death	0.4

Calculate the estimate for q_{75} obtained from these data, using the exact exposure method.

Solution:

There were two deaths at age 75.

$$q_{75} = 1 - e^{\frac{-2}{0.8+1.0+0.4}} = 0.597$$

For numbers 2 and 3, you only need to do the ones highlighted in yellow for the class. The rest are there in case you just want to have fun and see all the other options.

2. Jeff was born on 11-1-1955. Jeff purchased a life insurance policy on 7-1-2005. Jeff died on 4-1-2018.

   A mortality study is being conducted which includes Jeff's policy. The Study goes from 1-1-2016 to 12-31-2018. Complete the following table assigning months of exposure for each age listed for Jeff's policy.

Age	Exposure Method	Calendar Versus Anniversary	Age of Entry	Age of Exit	Age 59	Age 60	Age 61	Age 62
Exact Age	Exact	Calendar Yr.	60-2	62-5	0	10	12	5
Exact Age	Exact	Anniversary	60-8	62-5	0	4	12	5
Exact Age	Actuarial	Calendar Yr.	60-2	63	0	10	12	12
Exact Age	Actuarial	Anniversary	60-8	63	0	4	12	12
Insuring Age Last Birthday	Exact	Calendar Yr.	59-6	61-9	6	12	9	0
Insuring Age Last Birthday	Exact	Anniversary	60	61-9	0	12	9	0
Insuring Age Last Birthday	Actuarial	Calendar Yr.	59-6	62	6	12	12	0
Insuring Age Last Birthday	Actuarial	Anniversary	60	62	0	12	12	0

3. Jeff was born on 11-1-1955. Jeff purchased a life insurance policy on 7-1-2016. Jeff was alive at the end of the study

   A mortality study is being conducted which includes Jeff's policy. The Study goes from 1-1-2016 to 12-31-2018. Complete the following table assigning months of exposure for each age listed for Jeff's policy.

Age	Exposure Method	Calendar Versus Anniversary	Entry Age	Exit Age	Age 60	Age 61	Age 62	Age 63
Exact Age	Exact	Calendar Yr.	60-8	63-2	4	12	12	2
Exact Age	Exact	Anniversary	60-8	62-8	4	12	8	0
Exact Age	Actuarial	Calendar Yr.	60-8	63-2	4	12	12	2
Exact Age	Actuarial	Anniversary	60-8	62-8	4	12	8	0
Insuring Age Last Birthday	Exact	Calendar Yr.	60	62-6	12	12	6	0
Insuring Age Last Birthday	Exact	Anniversary	60	62	12	12	0	0
Insuring Age Last Birthday	Actuarial	Calendar Yr.	60	62-6	12	12	6	0
Insuring Age Last Birthday	Actuarial	Anniversary	60	62	12	12	0	0