MAP 4175 / 5177 Name:_____

Tests 5 Date: October 2, 2019

Show all work for full credit, and use correct notation. Simplify answers completely.

Numbers 1 and 2:
For a mortality study of 100 patients, you are given:

Time Range in Year	Number of Deaths
0 – 3	30
3 – 4	15
4 – 6	20
6 – 9	15
9+	20

1. Use the ogive to determine the probability that a randomly selected patient at the beginning of the study dies within 3.25 years.

2. Use the ogive to determine the probability that a randomly selected patient at the beginning of the study survives 8 years.

Numbers 3 – 5:
For a mortality study on 10 dragons, you are given the following times for death:

2 3 3 6 8 12 18 18 18 23

3. Determine the empirical estimate for $S(6)$, the probability that the time until death is greater than 6.

4. Approximate the variance of the empirical estimator for $S(6)$.

5. Determine an 80% linear symmetric confidence interval for $S(6)$ based on the empirical estimator. Note the following percentiles of the standard normal distribution:

Percentile	Value
80	0.842
85	1.036
90	1.282
95	1.645