MAP 4175 / 5177 Name:_____

Quiz 5 Date: October 11, 2017

Show all work for full credit, and use correct notation. Simplify answers completely.
Each question is worth 10 points

1. For a mortality table with a select period of two years, you are given:

x	$q_{[x]}$	$q_{[x]+1}$	q_{x+2}	$x+2$
50	0.050	0.065	0.080	52
51	0.055	0.070	0.085	53
52	0.060	0.075	0.090	54
53	0.065	0.080	0.095	55

Assume a constant force between integral ages.
Calculate $1000_{1.5|}q_{[51]+0.5}$

2. Given $q_x = 0.2$, and $e_{x:\overline{2}|} = 1.4$, determine q_{x+1}.

3. Suppose ${}_tp_{20:30} = \left(\frac{60-t}{60}\right)^2$ for $0 \le t \le 60$. $\overset{o}{e}_{20:30}$

4. Given $\mu_x = 0.05$, determine $e_{x:\overline{30|}}$.

5. Given $e_{30:\overline{30|}} = 24$, $e_{30:\overline{17|}} = 15$, and $e_{47:\overline{13|}} = 10$, determine ${}_{17}q_{30}$.