

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

1. For a double decrement table, given $p_x^{(1)} = 0.6$ and $q_x^{(\tau)} = 0.52$, determine $q_x^{(2)}$

2. You are given the double decrement table, where decrement d refers to death and decrement w refers to withdrawal:

x	$l_x^{(\tau)}$	$d_x^{(d)}$	$d_x^{(w)}$
50	1000	20	35
51	945	25	25
52	895	30	0

Determine

(a) ${}_3p_{50}^{(\tau)}$

(b) ${}_1q_{50}^{(d)}$

3. You are given the double decrement table:

x	$l_x^{(\tau)}$	$d_x^{(1)}$	$q_x^{(1)}$	$d_x^{(2)}$	$q_x^{(2)}$
95	-	150	-	-	0.15
96	-	-	0.40	-	0.40
97	-	-	0.50	36	0.50

Determine $l_{95}^{(\tau)}$

4. For a triple decrement table, given $\mu_x^{(1)}(t) = .05t$, $\mu_x^{(2)}(t) = .20t$, and $\mu_x^{(3)}(t) = .75t$ determine ${}_{0.5|0.3}q_x^{(3)}$