

Each problem is worth 10 points. Show all work for full credit, and use correct notation. Simplify answers completely. See other side for additional problems.

1. Given ${}_t p_x = \frac{100-x-t}{100-x}$, determine μ_{x+t}
2. Given ${}_t p_x = \left(\frac{100-x-t}{100-x}\right)^{3/2}$, determine μ_{x+t}
3. Given $\mu_{x+t} = \frac{3}{100-x-t}$ for $0 < t < 100 - x$, determine ${}_t p_x$
4. Given $\mu_{30+t} = \frac{2}{70-t}$, $0 < t < 70$, determine ${}_{20}p_{60}$
5. Given $\int_5^{10} {}_t p_{20} \mu_{20+t} dt = \frac{1}{12}$ and ${}_5 p_{25} = \frac{10}{11}$, determine ${}_5 q_{20}$