

Name: \_\_\_\_\_ Quiz Score: \_\_\_\_\_/20

**Quiz 3: Monday, September 15, 2014**

*Write the symbol, the formula, and your work. No credit for answers without sufficient justification. Use standard mathematical notation correctly.*

Suppose the lifetime distribution function for a newborn chipmunk in my backyard is given by

$$F_0(t) = 1 - \left(1 - \frac{t}{10}\right)^{1/2}, \quad \text{for } 0 \leq t \leq 10.$$

1. (10 pts) Find and simplify an expression for  ${}_t p_x$ , the probability that a chipmunk aged  $x$  survives to at least age  $x + t$ .

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2. (10 pts) Find and simplify a formula for  $\overset{\circ}{e}_x$ , the complete expectation of life for a chipmunk aged  $x$ .