

**STAT 472**

**Quiz 2**

**Fall 2020**

September 3, 2020

1. You are given that  $\mu_x = 0.001x + 0.01$  .

Calculate  ${}_{10}q_{50}$  .

2. You are given that  ${}_t p_x = 1 - \frac{t^3}{n^3}$  for  $0 \leq t \leq n$ .

You are also given that  $\overset{\circ}{e}_x = 4.5$

Calculate  $n$ .

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1. You are given that  $S_0(x) = 1 - \frac{x^2}{6400}$  for  $0 \leq x \leq 80$  .

If  $\mu_x = \frac{17}{222}$  , determine  $x$ .

2. You are given that  $\mu_x = 0.002x + 0.01$ .

Calculate  $e_{\overline{20}|}^{\cdot}$ .

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The  $n$  was provided in the email instructions for the quiz.

1. You are given that  ${}_t p_x = 1 - \frac{t^3}{n^3}$  for  $0 \leq t \leq n$ . Calculate:

a.  ${}_{3|2}q_x$

b.  $e_x$

c.  $\text{Var}[T_x]$

2. You are given:

$x$	$e_x$	$e_{x:\overline{10} }$
30	45	9
40	37	8
50	30	7

Calculate  ${}_{20}q_{30}$ .