

Question #225

Answer: B

$${}_tP_{40} = e^{-0.05t}$$

$${}_tP_{50} = (60 - t) / 60$$

$$\mu_{50+t} = 1 / (60 - t)$$

$$\int_0^{10} {}_tP_{40:50} \mu_{50+t} dt = \int_0^{10} \frac{e^{-0.05t}}{60} dt = -\frac{1}{60} \frac{e^{-0.05t}}{(0.05)} \Big|_0^{10}$$

$$= \frac{20}{60} (1 - e^{-0.5}) = 0.13115$$