Question #249
Answer: B

$$q_{xy}^{1} = \int_0^1 {}_t p_{xy} \mu_{x+t} dt = \int_0^1 {}_t p_{x\ t} p_y \mu_{x+t} dt$$

$$= \int_0^1 q_x e^{-0.25t} dt \text{ (under UDD, } {}_t p_x \mu_{x+t} = q_x)$$

$$0.125 = q_x (-4e^{-0.25t})\Big|_0^1 = q_x (4)(1-e^{-0.25}) = 0.8848 q_x$$

$$q_x = 0.1413$$