

Question #94

Answer: B

$$p_k = \left(a + \frac{b}{k}\right)p_{k-1}$$

$$0.25 = (a + b) \times 0.25 \Rightarrow a + b = 1$$

$$0.1875 = \left(a + \frac{b}{2}\right) \times 0.25 \Rightarrow \left(1 - \frac{b}{2}\right) \times 0.25 = 0.1875$$

$$b = 0.5$$

$$a = 0.5$$

$$p_3 = \left(0.5 + \frac{0.5}{3}\right) \times 0.1875 = 0.125$$