

## Question #212

Key: C

Since loss amounts are uniform on  $(0, 10)$ , 40% of losses are below the deductible (4), and 60% are above. Thus, claims occur at a Poisson rate  $\lambda^* = (0.6)(10) = 6$ .

Since loss amounts were uniform on  $(0, 10)$ , claims are uniform on  $(0, 6)$ .

Let  $N$  = number of claims;  $X$  = claim amount;  $S$  = aggregate claims.

$$E(N) = \text{Var}(N) = \lambda^* = 6$$

$$E(X) = (6 - 0) / 2 = 3$$

$$\text{Var}(X) = (6 - 0)^2 / 12 = 3$$

$$\text{Var}(S) = E(N)\text{Var}(X) + \text{Var}(N) [E(X)]^2$$

$$= 6 * 3 + 6 * 3^2$$

$$= 72$$