

Question #65**Answer is C**

$$E(N) = r\beta = 0.40$$

$$\text{Var}(N) = r\beta(1 + \beta) = 0.48$$

$$E(Y) = \theta/(\alpha - 1) = 500$$

$$\text{Var}(Y) = \theta^2 \alpha / [(\alpha - 1)^2 (\alpha - 2)] = 750,000$$

Therefore,

$$E(X) = 0.40(500) = 200$$

$$\text{Var}(X) = 0.40(750,000) + 0.48(500)^2 = 420,000$$

The full credibility standard is $n = \left(\frac{1.645}{0.05}\right)^2 \frac{420,000}{200^2} = 11,365$ and then

$$Z = \sqrt{2500/11,365} = 0.47.$$