

## Question #169

Key: A

Model Solution:

$X$  denotes the loss variable.

$X_1$  denotes Pareto with  $\alpha = 2$ ;  $X_2$  denotes Pareto with  $\alpha = 4$

$$F_X(200) = 0.8 F_{X_1}(200) + 0.2 F_{X_2}(200)$$

$$= 0.8 \left[ 1 - \left( \frac{100}{200 + 100} \right)^2 \right] + 0.2 \left[ 1 - \left( \frac{3000}{3000 + 200} \right)^4 \right]$$

$$= 1 - 0.8 \left( \frac{1}{3} \right)^2 - 0.2 \left( \frac{15}{16} \right)^4$$

$$= 0.7566$$