70. Solution: E

Let X denote actual losses incurred. We are given that X follows an exponential distribution with mean 300, and we are asked to find the 95th percentile of all claims that exceed 100 . Consequently, we want to find p_{95} such that

$0.95 = \frac{\Pr[100 < x < p_{95}]}{P[X > 100]} = \frac{F(p_{95}) - F(100)}{1 - F(100)}$ where F(x) is the distribution function of X .

Now $F(x) = 1 - e^{-x/300}$.

Therefore, $0.95 = \frac{1 - e^{-p_{95}/300} - (1 - e^{-100/300})}{1 - (1 - e^{-100/300})} = \frac{e^{-1/3} - e^{-p_{95}/300}}{e^{-1/3}} = 1 - e^{1/3} e^{-p_{95}/300}$

$e^{-p_{95}/300} = 0.05\ e^{-1/3}$

$p_{95} = -300 \ln(0.05\ e^{-1/3}) = 999$