

$$70. X \sim \text{Exp}(\text{mean} = 300)$$

$$\text{deductible} = 100$$

$$f(x) = \begin{cases} \frac{1}{300} e^{-x/300} & x > 0 \\ 0 & x < 0 \end{cases}$$

$$f(x|X > 100) = f(x) / (1 - F(100)) \quad x > 100$$

$$\left[F(100) = \int_0^{100} \frac{1}{300} e^{-x/300} dx = 1 - e^{-1/3} \right]$$

$$f(x|X > 100) = \frac{\frac{1}{300} e^{-x/300}}{e^{-1/3}}$$

$$0.95 = \int_{100}^c e^{1/3} \frac{1}{300} e^{-x/300} dx$$

$$0.95 = -e^{1/3} e^{-x/300} \Big|_{100}^c$$

$$0.95 = e^{1/3} e^{-1/3} - e^{1/3} e^{c/300}$$

$$0.05 = e^{1/3} e^{-c/300}$$

$$c = 999$$

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