59. Solution: B
The distribution function of X is given by
\[
F_X(x) = \int_{200}^{x} \frac{2.5(200)^{2.5}}{t^{3.5}} dt = -\frac{(200)^{2.5}}{t^{2.5}} \bigg|_{200}^{x} = 1 - \frac{(200)^{2.5}}{x^{2.5}}, \quad x > 200
\]
Therefore, the \( p^{th} \) percentile \( x_p \) of X is given by
\[
\frac{p}{100} = F_X(x_p) = 1 - \frac{(200)^{2.5}}{x_p^{2.5}}
\]
\[
1 - 0.01p = \frac{(200)^{2.5}}{x_p^{2.5}}
\]
\[
(1 - 0.01p)^{2/5} = \frac{200}{x_p}
\]
\[
x_p = \frac{200}{(1 - 0.01p)^{2/5}}
\]
It follows that \( x_{x_0} - x_{x_0} = \frac{200}{(0.30)^{2/5}} - \frac{200}{(0.70)^{2/5}} = 93.06 \)

60. Solution: E
Let X and Y denote the annual cost of maintaining and repairing a car before and after the 20% tax, respectively. Then \( Y = 1.2X \) and \( \text{Var}[Y] = \text{Var}[1.2X] = (1.2)^2 \text{Var}[X] = (1.2)^2(260) = 374 \).

61. Solution: A
The first quartile, Q1, is found by \( \frac{1}{4} = \int_{Q1}^{x} f(x) \, dx \). That is, \( \frac{1}{4} = (200/Q1)^{2.5} \) or
\[
Q1 = 200 \left(\frac{4}{3}\right)^{0.4} = 224.4 \]. Similarly, the third quartile, Q3, is given by \( Q3 = 200 \left(4\right)^{0.4} = 348.2 \). The interquartile range is the difference \( Q3 - Q1 \).