63. Solution: C

Note $Y = \begin{cases} X & \text{if} \quad 0 \le X \le 4 \\ 4 & \text{if} \quad 4 < X \le 5 \end{cases}$

Therefore,

$$E[Y] = \int_0^4 \frac{1}{5} x dx + \int_4^5 \frac{4}{5} dx = \frac{1}{10} x^2 \Big|_0^4 + \frac{4}{5} x \Big|_4^5$$

$$= \frac{16}{10} + \frac{20}{5} - \frac{16}{5} = \frac{8}{5} + \frac{4}{5} = \frac{12}{5}$$

$$E\left[Y^2\right] = \int_0^4 \frac{1}{5} x^2 dx + \int_4^5 \frac{16}{5} dx = \frac{1}{15} x^3 \Big|_0^4 + \frac{16}{5} x \Big|_4^5$$

$$= \frac{64}{15} + \frac{80}{5} - \frac{64}{5} = \frac{64}{15} + \frac{16}{5} = \frac{64}{15} + \frac{48}{15} = \frac{112}{15}$$

$$\text{Var}[Y] = E\left[Y^2\right] - \left(E[Y]\right)^2 = \frac{112}{15} - \left(\frac{12}{5}\right)^2 = 1.71$$