

62. A random variable X has the cumulative distribution function

$$F(x) = \begin{cases} 0 & \text{for } x < 1 \\ \frac{x^2 - 2x + 2}{2} & \text{for } 1 \leq x < 2 \\ 1 & \text{for } x \geq 2. \end{cases}$$

Calculate the variance of X .

(A) $\frac{7}{72}$

(B) $\frac{1}{8}$

(C) $\frac{5}{36}$

(D) $\frac{4}{3}$

(E) $\frac{23}{12}$