

12. $X = \{1, 2, 3, 4\}$, $f(x) = \{0.1, 0.2, 0.3, 0.4\}$

$$\begin{aligned} E(X) &= \sum_i x_i f(x_i) \\ &= (1 \times 0.1) + (2 \times 0.2) + (3 \times 0.3) + (4 \times 0.4) \\ &= 0.1 + 0.4 + 0.9 + 1.6 \end{aligned}$$

$$\boxed{E(X) = 3.0}$$