

sol

$$S = \{HHH, HHT, HTH, THH, TTH, THT, HTT, TTT\}$$

$$n(S) = 8$$

X = number of heads appear

$$X = 0, 1, 2, 3$$

$$P(X=0) = \frac{1}{8}$$

$$P(X=1) = \frac{3}{8}$$

$$P(X=2) = \frac{3}{8}$$

$$P(X=3) = \frac{1}{8}$$

$$P(X) = P.m.f.$$

$$2) \quad 0 \leq P(X) \leq 1$$

ملاحظة: دالة كثافة الاحتمال

$$\begin{aligned} \sum_{\forall x} P(x) &= P(X=0) + P(X=1) + P(X=2) + P(X=3) \\ &= \frac{1}{8} + \frac{3}{8} + \frac{3}{8} + \frac{1}{8} = 1 \end{aligned}$$

$$3) \quad P(X=-3) = P(X=5) = 0$$

$$4) \quad P(X > 1) = P(X=2) + P(X=3) = \frac{3}{8} + \frac{1}{8} = \frac{4}{8} = \frac{1}{2}$$

$$5) \quad P(X \geq 3) = P(X=3) = \frac{1}{8}$$