

11. $P(H) = 0.8$
 $P(T) = 0.2$

Entropy $H(x) = -\sum_{i=1}^n P(x_i) \log_2 P(x_i)$

$$\begin{aligned} H(x) &= -P(H) \log_2 P(H) + P(T) \log_2 P(T) \\ &= -[0.8 \log_2 0.8 + 0.2 \log_2 0.2] \\ &= -[0.8 \times (-3.219) + (0.2 \times (-2.3219))] \\ &= -[-0.25752 - 0.46438] \end{aligned}$$

$$= -[-0.7219]$$

$$\boxed{H(x) = 0.7219}$$