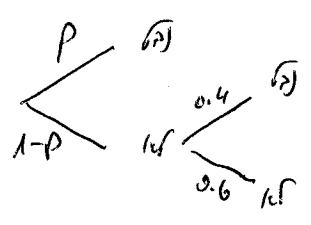


4
(504)



$$P(\text{right}) = 0.6(1-p) = 0.09$$

$$1-p = 3/20$$

$$p = 17/20 = 0.85$$

$$P(\text{left}) = (1-p) \cdot 0.4 = 0.15 \cdot 0.4 = 0.06$$

7
(505)

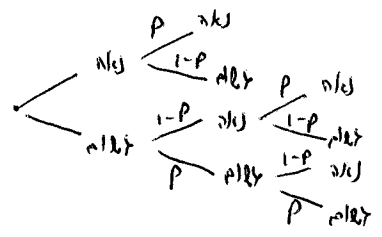
$$P(\text{win}) = 9(P(\text{win}^2))$$

$$P \cdot P = 9(1-p)(1-p) = 9(1-2p+p^2)$$

$$P^2 = 9 - 18p + 9p^2$$

$$8p^2 - 18p + 9 = 0 \Rightarrow p_1 = 1/8, p_2 = 3/4$$

11
(507)



$$P(\text{win}) = (1-p)(1-p) + P \cdot P = 0.68$$

$$1-2p+p^2+p^2 = 0.68$$

$$2p^2 - 2p + 0.32 = 0$$

$$p^2 - p + 0.16 = 0$$

$$p_1 = 0.8, p_2 = 0.2$$

14
(506)

$$P(\text{win}) = \frac{P(1-2P)}{1-P} + \frac{(1-P)2P}{P} = 0.56$$

$$P - 2P^2 + 2P - 2P^2 = 0.56$$

$$-4P^2 + 3P - 0.56 = 0 \Rightarrow p_1 = 0.4, p_2 = 0.35$$

17
(506)

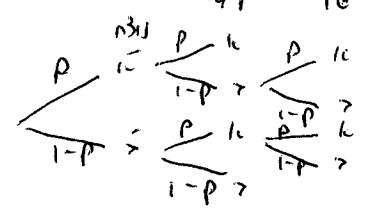
$$P(\text{win}) = \frac{1}{2} \cdot \frac{1}{2} (1-p) + \frac{1}{2} \cdot \frac{1}{2} P + \frac{1}{2} \cdot \frac{1}{2} (1-p) = \frac{5}{16}$$

$$\frac{1}{4} - \frac{1}{4}P + \frac{1}{4}P + \frac{1}{4} - \frac{1}{4}P = \frac{5}{16}$$

$$-\frac{1}{4}P = -\frac{3}{16} \Rightarrow P = 3/4$$

לפיכך P הוא 3/4
ועל כן תשובה היא 3/4

21
(507)



$$1.6P(\text{win}) = P(\text{win}^2)$$

$$1.6(P(1-P)P + (1-P)P \cdot P) + \frac{P \cdot P}{P} = P$$

$$P = 1.6(P^2 - P^3 + P^2 - P^3 + P^2) = 1.6(3P^2 - 2P^3)$$

$$P - 4.8P^2 + 3.2P^3 = 0$$

$$P(1 - 4.8P + 3.2P^2) = 0$$

"הסתברות" של P=0
P=0.25

$$P=0, P_1 = 1/4, P_2 = 1/4 = 0.25$$

25
(507)

$$P(\text{win}) = \frac{x}{7} \cdot \frac{x-1}{6} = \frac{1}{7}$$

$$x^2 - x = 6$$

$$x^2 - x - 6 = 0$$

$$x_1 = -2, x_2 = 3$$

3 סתמים, P, 4 אבנים.