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CTII348

Probabilidade II

$$\textcircled{1} S = \{LD, LD, LB, LB, LB\}, n(S) = 5$$

$$A = \{LD, LD\}, n(A) = 2$$

$$n(B) = 3$$

$$B = \{(LD, LD, LB) (LD, LB, LB) (LB, LB, LB)\}, n(B) = 3$$

$$C = \{(LD, LD, LB) (LD, LB, LB)\}, n(C) = 2$$

$$P(A \cup B) = P(A) + P(B) - P(C)$$

$$\frac{2}{5} + \frac{3}{5} - \frac{2}{5} = \frac{3}{5}$$

(B)

②, dois dados

SOMA 3 ou 4

$$S = 6 \cdot 6 = 36$$

$$n(S) = 36$$

$$A = \{(1, 2) (2, 1)\}, n(A) = 2$$

$$B = \{(1, 5) (5, 1) (2, 4) (4, 2) (3, 3)\}, n(B) = 5$$

$$P = P(A) + P(B)$$

$$= \frac{2}{36} + \frac{5}{36} = \frac{7}{36}$$

(C)

$$\textcircled{3} A = (\text{110 milhões ou } +); P(A) = 0,95$$

$$B = (\text{110 milhões ou } -); P(B) = 0,08$$

$$A \cap B = \text{EXATAMENTE 110 milhões}$$

$$A \cup B = \text{qualquer tamanho}$$

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$1 = 0,95 + 0,08 - P(A \cap B)$$

$$P(A \cap B) = 0,95 + 0,08 - 1 = 0,03 \text{ ou } 3\%$$

$$4) S = \{101, 102, \dots, 1000\}, n(S) = 900$$

1 n° tem o final 0 cada 10 n°

$$900/10 = 90$$

$$90 + 1 \quad (1000)$$

zero no final: 91 n°

Sem zero no final: 809 n

n° que terminam com 5 e são pares

9, 10, 5 (90 para cada caso)

$$\text{Termina com 0} = \frac{91}{900} \cdot \frac{91}{900} = 0,01 = 1\%$$

e termina com 0

$$\text{Termina sem 0} = \frac{809}{900} \cdot \frac{91}{900} = 0,09 = 9\%$$

e termina com 0

$$\text{Termina com 0} = \frac{91}{900} \cdot \frac{809}{900} = 0,09 = 9\%$$

e termina sem 0

$$\text{PAR e} = \frac{90}{900} \cdot \frac{90}{900} \cdot 4 = 0,04 = 4\%$$

termina com 5

$$\text{Termina com 5 e PAR} = \frac{90}{900} \cdot \frac{90}{900} = 0,04 = 4\%$$

$$1\% + 9\% + 9\% + 4\% + 4\% = 27\%$$

$$100\% - 27\% = 73\%$$

$$⑤ \text{ LIVROS: } 10!$$

$$\text{L. ECONOMIA: } 7$$

$$N(S) = P_{10} = 10!$$

$$\underline{7} \quad \underline{3} \quad \underline{2} \quad \underline{1}$$

$$N(7) = P_7 = 7!$$

$$\frac{7!}{10!} = \frac{4 \cdot 3 \cdot 2 \cdot 1 \cdot \cancel{7!}}{10 \cdot 9 \cdot 8 \cdot \cancel{7!}} = \frac{4 \cdot 3 \cdot 2 \cdot 1}{10 \cdot 9 \cdot 8} = \frac{24}{720} = \frac{1}{30}$$

$$⑥ \text{ CORES: } A = B$$

$$X, X, X = \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{8}$$

$$X, X, Y = \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot 3 = \frac{3}{8}$$

$$X, Y, Y = \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot 3 = \frac{3}{8}$$

$$y, y, y = \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{8}$$

$$P = \left(\frac{1}{8} \cdot \frac{1}{8} \right) + \left(\frac{3}{8} \cdot \frac{3}{8} \right) + \frac{3}{8} + \frac{3}{8} + \frac{1}{8} + \frac{1}{8}$$

$$P = \frac{1}{64} + \frac{9}{64} + \frac{9}{64} + \frac{1}{64} = \frac{20}{64} = \frac{5}{16} \quad (D)$$

7 10 dias = 7 dias em ALTA e 3 dias em BAIXA

$$C_{10,2} = \frac{10!}{2!(10-2)!} = \frac{10 \cdot 9 \cdot 8!}{2 \cdot 1 \cdot 8!} = \frac{10 \cdot 9}{2 \cdot 1} = \frac{90}{2} = 45$$

compro no dia	renda no dia	
5	6, 7, 11, 12, 14	+5
10	11, 12, 14	+2
13	14	+1

$$5 + 3 + 1 = 9$$

$$P = \frac{9}{45} = \frac{1}{5} \quad (C)$$

$$8 \quad n(S) = 9$$

$$A = \{(3,2) (2,3)\}$$

$$Ln(A) = 2$$

$$P(A) = \frac{n(A)}{n(S)} = \frac{2}{9}$$

(D)

9. HEXAGONO = 6 VERTICES, escolhe 3

$$C_{6,3} = \frac{6!}{3!3!} = \frac{6 \cdot 5 \cdot 4 \cdot \cancel{3!}}{\cancel{3!} \cdot 3 \cdot 2 \cdot 1} = \frac{6 \cdot 5 \cdot 4}{3 \cdot 2 \cdot 1} = \frac{120}{6} = 20 \text{ poss.}$$

1 vertice forma 2 retângulos

$$6 \cdot 2 = 12 \text{ retângulos}$$

$$P = \frac{12}{20} = \frac{3}{5}$$

(C)