

## Probabilidade 2

Pedro Henrique - CII 348

1)  $S = \{3\text{ lâmpadas}\} \quad 3/5$   
 $A = \{2\text{ lâmpadas}\} \quad 2/5$

$$A \cup S = A + S - A \cap S$$

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

$$A \cup S = 3/5$$

(B)

2)  $S = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20\}$

$$A(3) = \{1, 2, 3\} \quad - 2$$

$$B(6) = \{1, 5, 9, 13, 17, 21\} \quad 5$$

$$A \cup B = \{1, 2, 3, 5, 9, 13, 17, 21\}$$

$$A \cup B = 7/36$$

(C)

3)  $P(A) = 0,95$

$$P(B) = 0,08$$

$$P(A \cap B) = 0,03$$

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

$$= 0,95 + 0,08 - 0,03$$

$$P(A \cap B) = 1,03 - 1$$

$$P(A \cap B) = 0,03 \quad (30\%)$$

4)

$$109 - 109 = 9$$

$$\text{1 final 0} - 9 \times 10 \times 9 = 90 + 1 = 91$$

$$\text{2 final par } \times 5 \quad 9 \times 10 \times 5 = 450$$

$$A = 121/900$$

$$2 \text{ n final 0}$$

$$(91/900)(91/900) = 1\% 90$$

$$1 \text{ n } \text{ u } \text{ u}$$

$$2(91/100)(809/900) = 18\%$$

$$1 \text{ n par e outros finais}$$

$$900 \quad 900 \quad 900 \quad 2.4(90/900) (90/900) = 8\%$$

$$\text{total} = 27\%$$

73% não termina em 0

5)

$$a = 7$$

$$r = 4$$

a, b, c, d

$$a = 7!$$

$$P = 7! \frac{4!}{10!}$$

$$P = 21/30$$

(c)

$$b) \begin{array}{l} A=1 \\ B=3 \\ C=3 \\ D=2 \end{array}$$

$$\text{Total} = 8$$

posibilidades

$$\frac{1}{8}$$

$$\frac{3}{8}$$

$$\frac{3}{8}$$

$$\frac{8}{8}$$

$$A.A \quad \frac{1}{8} \cdot \frac{1}{8} = \frac{1}{64}$$

$$B.B \quad \frac{3}{8} \cdot \frac{3}{8} = \frac{9}{64}$$

$$C.C \quad \frac{3}{8} \cdot \frac{3}{8} = \frac{9}{64}$$

$$D.D \quad \frac{1}{8} \cdot \frac{4}{8} = \frac{4}{64}$$

$$\text{Total } \frac{20}{64} = \frac{5}{16} \quad (d)$$

2) C10 2

$$\frac{10!}{2! \cdot 8!} = \frac{10 \cdot 9}{2} = 45$$

dia 5    { 6, 7, 11, 12, 143    5

dia 10    { 11, 12, 143    3

dia 13    { 143                      1

9

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

8)

2: 9 níveis

so a 2 e 3

$$\begin{array}{l} 1^{\text{a}} \text{ rodada} \quad 2 \text{ possibilidades} = 4 \\ 2^{\text{a}} \quad \quad \quad 1 \quad \quad \quad = 3 \end{array}$$

$$A \cup B = 2/9 + 1/9 - 1/9 = \frac{2}{9} \quad \textcircled{D}$$

9)

$$C_6^3 = \frac{6!}{3! \cdot 3!} = \frac{6 \cdot 5 \cdot 4}{3 \cdot 2 \cdot 1} = 20$$

cada vértice forma 2 triângulos retângulos  
6 vértices  $\rightarrow 12$  "

$$12/20 = 3/5 \quad \textcircled{C}$$