

① 5 lâmpadas, 2 defeituosas (1)

3 Boas  $\frac{3 \cdot 2 \cdot 2 \cdot 3!}{5 \cdot 4 \cdot 3 \cdot 2!}$

$\frac{3 \cdot 1 \cdot 2 \cdot 3}{5 \cdot 2 \cdot 3} = \frac{18}{30}$  simplificando  
 $\hookrightarrow \frac{9:3}{18:3} = \frac{3}{5}$

② Dois dados. Resultados distintos 3 ou 6 (2)

$A = \{\text{Soma } 3\} = (1,2) (2,1) \rightarrow 2 \text{ n}(A)$

$B = \{\text{Soma } 6\} = (1,5) (5,1) (4,2) (2,4) (3,3) \rightarrow 5 \text{ n}(B)$

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

$P(A \cup B)$

$\frac{2}{36} + \frac{5}{36} - \frac{0}{36} \rightarrow \frac{7}{36}$

③ 110 milhões  $\rightarrow P(A) = \text{população} \geq 110$  (3)

$P(B) = \text{população} \leq 110$

$P(A \cup B) = \text{união probabilísticos} = 100\%$

$P(A \cap B) = \text{população} = 110 \text{ ?}$

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

$100\% = 95\% + 8\% - x$

$100\% = 103\% - x = 3\%$

④ dois números naturais entre 101 e 1000

$$n(S) = 900 - \text{não ser múltiplo de 10} \rightarrow 91$$

$$P_{\text{ar}} = (2, 4, 6, 8) = 360 - 10 \text{ números tem 4 p}$$

$$90 \text{ conjuntos} \rightarrow \frac{91}{900} \cdot \frac{91}{900} = 1\% \quad \frac{91}{900} \cdot \frac{809}{900} = 9\%$$

$$\frac{809}{900} \cdot \frac{91}{900} = 9\%$$

$$2 \text{ de } \frac{360}{900} \cdot \frac{90}{900} = 4\%$$

$$100\% - 1\% - 9\% - 9\% - 4\% - 4\% = 73\%$$

⑤ São 10 livros, 7 de economia

$$n(S) = 10!$$

$$P_7 \cdot P_4 = 7! \cdot 4!$$

$$P = 7! \cdot 4! = 7 \cdot 4 \cdot 3 \cdot 2 = 24 = 1$$

$$10 \cdot 9 \cdot 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1 = 30$$

⑥ Cores A e B - Casos -  $n(E_1) = 1$   $n(E_2) = 3$

$$n(E_3) = 3 \quad n(E_4) = 1 > 8 \quad n(E)$$

$$n(S)$$

$$C_1 = 1, C_2 = 3, C_3 = 3, C_4 = 1$$

$$\begin{array}{ccccccc} \downarrow & 8 & \downarrow & 8 & \downarrow & 8 & \downarrow & 8 \\ \downarrow & 1 & \downarrow & 9 & \downarrow & 9 & \downarrow & 1 \\ 64 & 64 & 64 & 64 & 64 & 64 & 64 & 16 \end{array} = 20:4 = 5$$



$$\textcircled{7} C_{10,2} = \frac{10!}{(10-2)! \cdot 2!} = \frac{10 \cdot 9 \cdot 8!}{8! \cdot 2} = 45 = n(s)$$

dia 5  $\rightarrow$  6, 7, 11, 12, 14      dia 10  $\rightarrow$  11, 12, 14

dia 13  $\rightarrow$  14       $rd = 9$        $\frac{9!}{9!} = \frac{1}{1}$   
 $\frac{9!}{9!} = \frac{1}{1}$

$$\textcircled{8} 9, \{1, 2, 3\} \text{ 3 vezes} \quad 5: (3, 2) (2, 3)$$

$$9 \cdot 9 = 81 = n(s) \quad \hookrightarrow 3 \cdot 3 + 3 \cdot 3 = 18$$

$$p = \frac{18}{81} : 9 = \frac{2}{9}$$

$$\textcircled{9} C_{6,3} = \frac{6!}{(6-3)! \cdot 3!} = 20 = n(s)$$

$\hookrightarrow$  6 vértices  $\rightarrow$  12  $\Delta$        $\frac{12!}{20!} = \frac{3}{5}$