Beatriz Bastos Borges Nº03 CTII 350

Tarefa Básica

1. • 3 boas
• 2 defeituosas

$\frac{3 \cdot 2 \cdot 2}{5 \cdot 4 \cdot 3} \cdot \frac{3!}{2!} = \frac{1}{5} \cdot \frac{3 \cdot \cancel{2!}}{\cancel{2!}}$ $P(A) = \frac{3}{5}$

$\boxed{\text{Altenativa B}}$

2. $n(S) = 6 \cdot 6 = 36$

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

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

$P(A \cup B) = \frac{2}{36} + \frac{5}{36} - \frac{0}{36} = \boxed{\frac{7}{36}}$ $\boxed{\text{Alternativa C}}$

3. $P(A) = 95\% \rightarrow 0{,}95$
$P(B) = 8\% \rightarrow 0{,}08$
$P(A \cup B) = 100\% \rightarrow 1$

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

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

4. $n(S) = 10 \cdot 10 = 100$

$A = \{(0,0), (0,1), (0,2), (0,3), (0,4), (0,5), (0,6), (0,7), (0,8), (0,9), (1,0), (2,0), (2,5), (3,0), (4,0), (4,5), (5,0), (5,2), (5,4), (5,6), (5,8), (6,0), (6,5), (7,0), (8,0), (8,5), (9,0)\} = 27 \rightarrow n(A) = 27$

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

$1 = 0,27 + P(B) - 0$

$P(B) = 1 - 0,27$

$P(B) = 0,73 \rightarrow \boxed{73\%}$

5. $n(S) = P_{10} = 10!$

• 7 livros de economia juntos $\rightarrow P_4 \cdot P_7$

$P(A) = \dfrac{4!\,7!}{10!} = \dfrac{\cancel{4} \cdot 3 \cdot \cancel{2} \cdot 1 \cdot \cancel{7!}}{10 \cdot 9 \cdot \cancel{8} \cdot \cancel{7!}} = \dfrac{3}{90} = \boxed{\dfrac{1}{30}}$ $\boxed{\text{Alternativa C}}$

6. Supondo que as cores disponíveis para pintar os triângulos sejam X e Y

3 lados de cor X $\rightarrow \dfrac{1}{2} \cdot \dfrac{1}{2} \cdot \dfrac{1}{2} = \dfrac{1}{8}$

3 lador de cor Y $\rightarrow \dfrac{1}{2} \cdot \dfrac{1}{2} \cdot \dfrac{1}{2} = \dfrac{1}{8}$

2 lados de cor X e 1 de cor Y $\rightarrow 3 \cdot \dfrac{1}{2} \cdot \dfrac{1}{2} \cdot \dfrac{1}{2} = \dfrac{3}{8}$

2 lados de cor Y e 1 de cor X $\rightarrow 3 \cdot \dfrac{1}{2} \cdot \dfrac{1}{2} \cdot \dfrac{1}{2} = \dfrac{3}{8}$ $\boxed{\text{Alternativa D}}$

$P = \dfrac{1}{8} \cdot \dfrac{1}{8} + \dfrac{3}{8} \cdot \dfrac{3}{8} + \dfrac{3}{8} \cdot \dfrac{3}{8} + \dfrac{1}{8} \cdot \dfrac{1}{8} = \dfrac{20}{64} = \boxed{\dfrac{5}{16}}$

7. $n(S) = C_{10,2} = \frac{\overset{5}{\cancel{10}} \cdot 9}{\cancel{2} \cdot 1} = 45$

$A = \{(5,6), (5,7), (5,11), (5,12), (5,14), (10,11), (10,12), (10,14),$
$(13,14)\} = 9 \rightarrow n(A) = 9$

$P(A) = \frac{9}{45} = \boxed{\frac{1}{5}}$ $\boxed{\text{Alternativa C}}$

8. $n(S)) = 9 \cdot 9 = 81$

$A = \{(2,3), (2,3), (2,3), (2,3), (2,3), (2,3), (2,3), (2,3), (2,3),$
$(3,2), (3,2), (3,2), (3,2), (3,2), (3,2), (3,2), (3,2), (3,2)\} = 18$

$n(A) = 18$

$P(A) = \frac{18}{81} = \boxed{\frac{2}{9}}$ $\boxed{\text{Alternativa D}}$

9. $n(S) = C_{6,3} = \frac{\cancel{6} \cdot 5 \cdot 4}{\cancel{3} \cdot \cancel{2} \cdot 1} = 20$

• Cada vértice consegue formar 2 triângulos

$n(A) = 2 \cdot 6 = 12$

$P(A) = \frac{12}{20} = \boxed{\frac{3}{5}}$ $\boxed{\text{Alternativa C}}$