

Lista de exercícios

1. $P_5 - A_{4,3} = \frac{5!}{C_{4,2}} - (4 \cdot 3 \cdot 2) = \frac{120 - 24}{\frac{4 \cdot 3}{2 \cdot 1}} = \frac{96}{6} = \underline{\underline{16}}$

2. 8 questões
6 escolhas $C_{8,6} = \frac{8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3}{6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1} = \frac{80160}{720} = \underline{\underline{28}}$

3. $C_{4,3} = \frac{4 \cdot 3 \cdot 2}{3 \cdot 2 \cdot 1} = \frac{24}{6} = \underline{\underline{4}}$

$$C_{6,2} = \frac{6 \cdot 5}{2 \cdot 1} = \frac{30}{2} = \underline{\underline{15}}$$

$$C_{4,3} \cdot C_{6,5}$$

$$4 \cdot 15 = \underline{\underline{60}}$$

4. $A = \{0, 1, 2, 3, 4\}$

$$C_{5,3} = \frac{5 \cdot 4 \cdot 3}{C_4 \cdot 3 \cdot 2 \cdot 1} = \frac{60}{6} = \underline{\underline{10}}$$

5. $C_{6,2} = \frac{6 \cdot 5}{2 \cdot 1} = \frac{30}{2} = \underline{\underline{15}}$

$$C_{6,2} \cdot C_{4,2}$$

$$15 \cdot 6 = \underline{\underline{90}}$$

$$C_{4,2} = \frac{4 \cdot 3}{2 \cdot 1} = \frac{12}{2} = \underline{\underline{6}}$$

alternativa (c)

$$6. C_{4,3} = \frac{4 \cdot 3 \cdot 2}{3 \cdot 2 \cdot 1} = \frac{24}{6} = 4 \quad C_{4,3} \cdot C_{4,3} \cdot C_{4,3}$$

$$4 \cdot 4 \cdot 4 = \underline{\underline{64}}$$

alternativa (E), //

$$7. C_{5,2} = \frac{5 \cdot 4}{2 \cdot 1} = \frac{20}{2} = 10 \rightarrow 10 \cdot 4 = 40 \text{ partidas}$$

4 jogos \rightarrow 2 jogos \rightarrow 1 jogo (final)

$$40 + 4 + 2 + 1 = \underline{\underline{47}} \quad \text{alternativa (E), //}$$

$$8. C_{6,2} = \frac{6 \cdot 5}{2 \cdot 1} = \frac{30}{2} = 15 \quad C_{4,2} = \frac{4 \cdot 3}{2 \cdot 1} = \frac{12}{2} = 6$$

$$C_{2,2} = \frac{2 \cdot 1}{2 \cdot 1} = \frac{2}{2} = 1 \quad C_{6,2} \cdot C_{4,2} \cdot C_{2,2}$$

$$15 \cdot 6 \cdot 1 = \underline{\underline{90}}$$

alternativa (D), //

$$9. C_{10,1} = \frac{10}{1} = 10 \quad C_{10,1} + C_{10,2} + C_{10,3}$$

$$10 + 45 + 120 = \underline{\underline{175}}$$

$$C_{10,2} = \frac{10 \cdot 9}{2 \cdot 1} = \frac{90}{2} = 45 \quad 175 \cdot 3 = \underline{\underline{525}}$$

alternativa (A), //

$$C_{10,3} = \frac{10 \cdot 9 \cdot 8}{3 \cdot 2 \cdot 1} = \frac{720}{6} = 120$$