

Lista de exercícios

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

2. 8 questões
6 escolhas $C_{8,6} = \frac{8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3}{6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1} = \frac{20160}{720} = 28$

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

$C_{4,3} \cdot C_{6,5}$
 $4 \cdot 15 = 60$

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

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

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

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

$C_{6,2} \cdot C_{4,2}$
 $15 \cdot 6 = 90$

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

alternativa (c)

$$6. C_{4,3} = \frac{4 \cdot 3 \cdot 2}{3 \cdot 2 \cdot 1} = \frac{24}{6} = 4 \quad C_{4,3} \cdot C_{4,3} \cdot C_{4,3} \\ 4 \cdot 4 \cdot 4 = \underline{64} \\ \text{alternativa (E),}$$

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

$$4 \text{ jogos} \rightarrow 2 \text{ jogos} \rightarrow 1 \text{ jogo (Final)} \\ 40 + 40 + 2 + 1 = \underline{47} \text{ alternativa (E),}$$

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

$$C_{2,2} = \frac{2 \cdot 1}{2 \cdot 1} = \frac{2}{2} = 1 \quad C_{6,2} \cdot C_{4,2} \cdot C_{2,2} \\ 15 \cdot 6 \cdot 1 = \underline{90} \\ \text{alternativa (D),}$$

$$9. C_{10,1} = \frac{10 \cdot 1}{1} = 10$$

$$C_{10,1} + C_{10,2} + C_{10,3} \\ 10 + 45 + 120 = 175$$

$$C_{10,2} = \frac{10 \cdot 9}{2 \cdot 1} = \frac{90}{2} = 45$$

$$175 \cdot 3 = \underline{525}$$

alternativa (A),

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