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o Combinações

(1) $P_5 = 5! = 5.4.3.2.1 = 120$

$A_{4,3} = \frac{4!}{(4-3)!} = \frac{4.3.2.1}{1!} = 24$

$C_{4,2} = \frac{4!}{(4-2)!\,2!} = \frac{4.3.2!}{2!\,2!} = \frac{12}{2} = 6$

$\frac{120 - 24}{6}$

$= \frac{96}{6} = 16$

(2) $C_{8,6} = \frac{8!}{(8-6)!\,6!} = \frac{8 \cdot 7 \cdot 6!}{2 \cdot 1\, 6!} = \frac{56}{2} = 28$

(3) $4! = \frac{4 \cdot 3 \cdot 2}{3 \cdot 2 \cdot 1} \cdot \frac{6 \cdot 5}{2 \cdot 1} \Rightarrow 4 \cdot 15 \Rightarrow 60$

(4) $\frac{5 \cdot 4 \cdot 3}{3 \cdot 2 \cdot 1} = \frac{60}{6} = 10$

(5) $C_{6,2} = \frac{6!}{(6-2)!\,2!} = \frac{6 \cdot 5 \cdot 4!}{4!\,2 \cdot 1} = \frac{30}{2} = 15$

$C_{4,2} = \frac{4!}{(4-2)!\,2!} = \frac{4 \cdot 3 \cdot 2!}{2!\,2 \cdot 1} = \frac{12}{2} = 6$

$15 \times 6 = 90$

C

(6) $\frac{4!}{(4-3)!\,3!} = \frac{4 \cdot 3!}{1!\,3!} = 4$ / $\frac{4!}{(4-3)!\,3!} = \frac{4 \cdot 3!}{1!\,3!} = 4$

E

tilibra $\frac{4!}{(4-3)!\,3!} = \frac{4 \cdot 3!}{1!\,3!} = 4 \rightarrow 4 \cdot 4 \cdot 4 = 64$

(7) $C_{5,2} = \frac{5!}{(5-2)!\,2!} = \frac{5.4.3!}{3!\,2.1} = \frac{20}{2} = 10$

E

$4 . 10 = 40$ jogos $\quad 40 + 4 + 2 + 1 =$ 47 jogos

(8) $C_{6,2} = \frac{6!}{(6-2)!\,2!} = \frac{6.5.4!}{4!\,2.1} = \frac{30}{2} = 15 \quad \frac{1}{1} \quad \frac{2!}{2!} = 1$

$C_{4,2} = \frac{4!}{(4-2)!\,2!} = \frac{4.3.2!}{2!\,2.1} = \frac{12}{2} = 6 \Longrightarrow 15 . 6 . 1 =$ 90

1

(9) $C_{10,9} = \frac{10!}{(10-9)!\,9!} = \frac{10 \cdot 9!}{1!\,9!} = 10$

$C_{10,2} = \frac{10!}{(10-2)!\,2!} = \frac{10 \cdot 9 \cdot 8!}{8!\,2 \cdot 1} = \frac{90}{2} = 45$

$C_{10,3} = \frac{10!}{(10-3)!\,3!} = \frac{10 \cdot 9 \cdot 8 \cdot 7!}{7!\,3 \cdot 2 \cdot 1} = \frac{720}{6} = 120$

$10 + 45 + 120 = 175 \cdot 3 = 525$