

Combinações:

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

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

0.

2. $\frac{8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3}{6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1} = \frac{20160}{720} = 28 \text{ modos}$

3. 10 pessoas \rightarrow 4 brasileiros e 6 italianos

$$4 \cdot 3 \cdot 2 = 4 \quad 6 \cdot 5 = 15$$

$$3 \cdot 2 \cdot 1 \quad C_{4,3} \quad 2 \cdot 1 \quad C_{6,2}$$

$$15 \cdot 4 = 60 //$$

$$4. \frac{n!}{p! \cdot (n-p)!} = \frac{5!}{3! \cdot (5-3)!} = \frac{120}{6 \cdot 2} = 10_{II}$$



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

$$15 \cdot 6 = 90_{II} (c)$$

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

$$(A) 252 + 6 \cdot 252 = 1512 + 1512$$

6. mat	ing	ges	
$\frac{4 \cdot 3 \cdot 2}{3 \cdot 2 \cdot 1} = 4$	$\frac{4 \cdot 3 \cdot 2}{3 \cdot 2 \cdot 1} = 4$	$\frac{4 \cdot 3 \cdot 2}{3 \cdot 2 \cdot 1} = 4$	$4^3 = 64 (e)$
$C_{4,3}$	$C_{4,3}$	$C_{4,3}$	

$$7. C_{5,2} = \frac{5!}{2! \cdot 3!} = 10 \quad 4 \cdot 10 = 40_{II}$$

$$4 + 2 + 1 = 7 \rightarrow 40 + 7 = 47 (e)$$

8

$$\text{Time A: } C_{6,2} = \frac{6!}{4! \cdot 2!} = \frac{6 \cdot 5}{2 \cdot 1} = 15_{II}$$

$$\text{Time B: } C_{4,2} = \frac{4!}{2! \cdot 2!} = \frac{4 \cdot 3}{2 \cdot 1} = 6 \quad 15 \cdot 6 \cdot 1 = 90 (D)$$

$$\text{Time C: } C_{2,2} = 1$$

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

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

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

$$10 + 45 + 120 = 175 \cdot 3 = 525 (A)$$