

## Tarefa Básica 14

### Permutações

1. 8 pessoas Antônio  $\leftrightarrow$  Pedro

AP

$$P_8 - P_7 \cdot P_2 = 8! - 7! \cdot 2! = 8! - 5040 \cdot 2 = 8! - 10080$$
$$= 40320 - 10080$$
$$= \boxed{30240}$$

2. 6 vogais  $\rightarrow$  6 5 4 3 2 1 = 720

1 2 3 4 5 1 1  $\rightarrow$  120

$$720 - 120 = \boxed{600}$$

3. MORAL  $\rightarrow$  5 4 3 2 1 = 5!

5 letras

$$= 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1$$

$$= \boxed{120}$$

4. MACKENZIE  $\rightarrow$  1 7 6 5 4 3 2 1 1  $\rightarrow$

9 letras

$$1 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1 = \boxed{5040}$$

5. LONDRES 2 5 4 3 2 1 1  $\rightarrow$  2 \cdot 5!

7 letras

$$\rightarrow 2 \cdot 120 = \boxed{240}$$



6.  $\overbrace{1} \quad \overbrace{2} \quad \overbrace{3} \quad \overbrace{4} \rightarrow P_4 = 4! = 24$

$\boxed{11}$

3

2

1

$\rightarrow$

$P_4 = 4! = 24$

2

$\rightarrow$

$24 - 2 = 22$

$\boxed{48}$

(B)

7. ERNESTO  $\rightarrow$  4 5 4 3 2 1 3

7 letras

consoante

consoante

$5! \cdot 4 \cdot 3 = 1440$

Porém a letra "E" se repete 2 vezes:

$\frac{1440}{2!} = \frac{1440}{2} = \boxed{720}$

(B)

8.  $\boxed{HH} \quad \overbrace{3} \quad \overbrace{2} \quad \overbrace{1} \rightarrow P_5 - P_4 \cdot P_2$

m

m

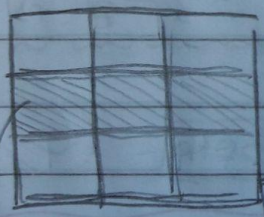
m

$5! - 4! \cdot 2!$

$120 - 48 = \boxed{72}$

(B)

9.



$P_C^{3,3} = \frac{6!}{3! \cdot 3!} = \frac{720}{6 \cdot 6} = 20$

3 possibilidades, logo...  $20 \cdot 3 = \boxed{60}$

(E)