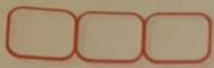


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Tarefa Básica – Fatorial de um número natural



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Fatorial de um número natural

1- A) $4! = 4 \cdot 3 \cdot 2 \cdot 1 = 24$

B) $5! - 6! = 5! - 6 \cdot 5! = 5 \cdot 5! = 5 \cdot 120 = 600$

C) $\frac{9!}{6!} = \frac{9 \cdot 8 \cdot 7 \cdot 6!}{6!} = 9 \cdot 8 \cdot 7 = 504$


D) $\frac{98!}{100!} = \frac{98!}{100 \cdot 99 \cdot 98!} = \frac{1}{100 \cdot 99} = \frac{1}{9.900}$

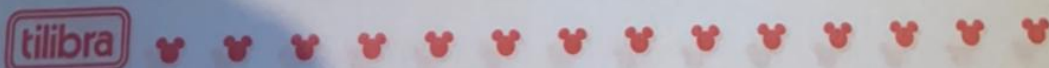
2- $\frac{1-n}{n! \cdot (n+1)!} = \frac{1-n}{n! \cdot (n+1) \cdot n!} \sim \text{Letra A}$

$\frac{n+1-n}{(n+1) \cdot n!} = \frac{1}{n! \cdot (n+1)} = \frac{1}{(n+1)!}$

3- $\frac{(n!)^2 - (n-1)! \cdot n!}{(n-1)! \cdot n!} = \frac{n! - (n-1)!}{(n-1)!}$

$\frac{n \cdot (n-1)! - (n-1)!}{(n-1)!} = \frac{n-1}{1} = n-1 \sim \text{Letra A}$





$$4 - \frac{(n+2)!}{(n+1)!} \cdot \frac{(n-2)!}{(n-1)!} = 4$$

$$\frac{(n+2)!}{(n+1)!} \cdot \frac{(n-2)!}{(n-1)!}$$

$$\frac{(n+2) \cdot (n+1)!}{(n+1)!} \cdot \frac{(n-2)!}{(n-1)!} = 4$$

$$\frac{(n+2)!}{(n+1)!} \cdot \frac{(n-2)!}{(n-1)!}$$

$$\frac{n+2}{n-1} = 4 \Rightarrow n+2 = 4(n-1) \sim \text{Letra A}$$

$$\frac{n-4}{n-1} = -2$$

$$n-4n = -2-2 \quad \text{números}$$

$$-3n = -6 \quad \text{par}$$

$$n = 2$$

$$5 - \frac{(n+1)!}{(n+1)!} \cdot \frac{n!}{n!} = 7$$

$$\frac{(n+1)!}{(n+1)!} \cdot \frac{n!}{n!}$$

$$\frac{(n+1)!}{(n+1)!} \cdot \frac{n!}{n!} = 7$$

$$\frac{n!}{(n+1)!} \cdot \frac{n!}{n!} = 7$$

$$\frac{n!}{(n+1)!} \cdot \frac{n!}{n!}$$

$$n+1-1 = 7 \Rightarrow n = 7$$

$$\frac{n+1}{n+1} \cdot \frac{n+1}{n+1} \cdot \frac{n+1}{n+1} \cdot \frac{n+1}{n+1}$$

$$n = 7 \sim \text{Letra D}$$

$$6 - \frac{(n-1)!}{(n-1)!} \cdot \frac{(n+1)!}{(n+1)!} \cdot \frac{n!}{n!}$$

$$\frac{(n-1)!}{(n-1)!} \cdot \frac{(n+1)!}{(n+1)!} \cdot \frac{n!}{n!} = (n-1)! \cdot (n \cdot n!)$$

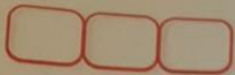
$$\frac{n(n-1)!}{(n-1)!} \cdot \frac{n!}{n!} = (n!) \cdot (n!) \rightarrow n(n-1)!$$

$$\frac{(n-1)!}{(n-1)!} \cdot (n \cdot n) = (n-1)! \cdot n \cdot n!$$

$$(n-1)! \cdot n = n! = (n-1)! \cdot n \cdot n!$$

$$n! \cdot n! = (n!)^2 \sim \text{Letra D}$$





$$7 - n! + (n-1)! = 6$$

$$(n+1)! - n! = 25$$

$$n \cdot (n-1)! + (n-1)! = 6$$

$$(n+1) \cdot n! - n! = 25$$

$$(n-1)! \cdot (n+1) = 6$$

$$(n+1-1) \cdot n! = 25$$

$$(n-1)! \cdot (n+1) = 6$$

$$n \cdot n(n-1)! = 25$$

$$n+1 = 6$$

$$25(n+1) = 6n^2$$

$$n \cdot n = 25$$

$$25(n+1) - 6n^2 = 0$$

$$n+1 = 6$$

$$25n + 25 - 6n^2 = 0$$

$$n^2 = 25$$

$$-6n^2 + 25n + 25 = 0$$

$$6n^2 - 25n - 25 = 0$$

$$6n^2 + 5n - 30n - 25 = 0$$

$$n(6n+5) - 5(6n+5) = 0$$

$$(6n+5) \cdot (n-5) = 0$$

$$6n+5 = 0$$

$$n = -5$$

$$n = 5$$

~ letra C

$$n-5 = 0$$

$$5$$