

Korek 9

01. Calculator

$$a - 4! \quad \begin{array}{c} \text{12} \quad 24 \\ \hookrightarrow 4 \cdot 3 \cdot 2 \cdot 1 = 24 \end{array}$$

$$b - 5! - 6! \\ \hookrightarrow 6 \cdot 5! (1-6) = 24 \\ 5 \cdot 24 (-5) = -600$$

$$c - \frac{9!}{6!} \quad \frac{9 \cdot 8 \cdot 7 \cdot 6!}{6!} = \frac{3024}{6!} = 504$$

$$d - \frac{98!}{100!} = \frac{98!}{100 \cdot 99 \cdot 98!} = \frac{98!}{970200 \cdot 98!} = \frac{1}{970200}$$

02.  $\frac{1}{n!} - \frac{n}{(n+1)!}$  Obtem-se  $\frac{1}{n!} - \frac{n}{(n+1)!}$

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

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



$$(n+1)! (n+1)!$$

03 - Simplificando

$$\hookrightarrow \frac{(n!)^2 - (n-1)! n!}{(n-1)! n!} \quad \frac{n! (n! - (n-1)!)}{(n-1)! n!}$$

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

04 -  $(n+2)! (n-2)! = 4$  é um número natural

$$(n+2)! (n-2)! \quad \text{Como}$$

$$\frac{(n+2) \cdot (n+1)! \cdot (n-2)!}{(n+1)! (n-1) \cdot (n-2)!} = \frac{(n+2)}{(n-1)} = 4 = 4n - 4 - n = 0$$

$$3n = 2 + 4$$

$$3n = 6$$

$$n = \frac{6}{3} = 2$$

$$3$$



$$05 - \frac{(n+1)! - n!}{(n+1)!} = \frac{1}{n+1}$$

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

$$\frac{n}{n+1} = \frac{1}{n+1} \Rightarrow n = 1$$

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

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

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

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

$$06 - (n-1)! [(n+1)! - n!] = ?$$

$$(n-1)! [n! (n+1 - 1)]$$

$$n \cdot (n-1)! \cdot n! = (n!)^2$$

$$07 - n! + (n-1)! = 6 \Rightarrow (n-1)! (n+1)$$

$$(n+1)! - n! \text{ as } n! (n+1 - 1)$$

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

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