

TAREFA BÁSICA - FATORIAL

DSTQSSS

① (A) $4! = 4 \cdot 3 \cdot 2 \cdot 1$
 $4! = 4 \cdot 6$
 $4! = 24$

② (B) $5! - 6!$
 $120 - 720$
 $- 600$

$5! = 5 \cdot 4!$
 $5! = 5 \cdot 24$
 $5! = 120$

$6! = 6 \cdot 5! = 720$
 $6! = 6 \cdot 120 = 720$
 $6! = 720$

③ $9!$
 $6!$

9
 \downarrow

$362880 = 504$
 720

$9! = 9 \cdot 8 \cdot 7 \cdot 720$

$9! = 9 \cdot 8 \cdot 5040$

$9! = 9 \cdot 40320$

$9! = 362880$

④ $98!$
 $100!$
 \downarrow

$98!$

$100 \cdot 99 \cdot 98! = 100 \cdot 99 \cdot 9900$

$100! = 100 \cdot 99 \cdot 98!$

$$\textcircled{2} \frac{1}{N!} - \frac{N}{(N+1)!} \Rightarrow \frac{1}{N!} - \frac{N}{(N+1)N!} \Rightarrow \frac{1}{N!} \left(1 - \frac{N}{N+1} \right)$$

$$\frac{1}{N!(N+1)} - \frac{1}{(N+1)!}$$

$$\textcircled{3} \frac{(N!)^2 - (N-1)!N!}{(N-1)!N!} \Rightarrow \frac{N! \{ N! - (N-1)! \}}{(N-1)!N!} \Rightarrow \frac{N! - (N-1)!}{(N-1)!}$$

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

ALTERNATIVA (A)

$$\textcircled{4} \frac{(N+2)!(N-2)!}{(N+1)!(N-1)!} = 4$$

↓

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

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

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

$$4! = 24$$

SOMENTE UMA SOLUÇÃO CO
TENDO UM NÚMERO PAR PO

$$\frac{1}{N! (N+1)!} + \frac{1}{(N+1)!}$$

$$\textcircled{3} \frac{(N!)^2 - (N-1)! N!}{(N-1)! N!} \rightarrow \frac{N! (N! - (N-1)!)}{(N-1)! N!} \rightarrow \frac{N! - (N-1)!}{(N-1)!}$$

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

ALTERNATIVA (A)

$$\textcircled{4} \frac{(N+2)! (N-2)!}{(N+1)! (N-1)!} = 4$$

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

$$4! = 24$$

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

$$\downarrow$$

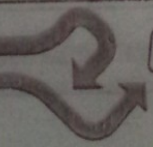
$$\frac{4! \cdot 1}{3! \cdot 1} = 4$$

$$\downarrow$$

$$24 = 4$$

$$6$$

SOMENTE UMA SOLUÇÃO CON-
TENDO UM NÚMERO PAR, PODE
SATISFAZER ESSA QUESTÃO, LOGO
ALTERNATIVA (A)



$$\textcircled{5} \frac{(N+1)! - N!}{(N+1)!} = \frac{7}{N+1} \Rightarrow \frac{(N+1) \cdot N! - N!}{(N+1) \cdot N} = \frac{7}{N+1}$$

$$\frac{N! \cdot (N+1 - 1)}{N! \cdot (N+1)} = \frac{7}{N+1} \Rightarrow \frac{N}{N+1} = \frac{7}{N+1} \quad \text{ALTERNATIVA (D)}$$

$$N = 7$$

$$\textcircled{6} \frac{(N-1)! \cdot [(N+1)! - N!]}{(N-1)! \cdot (N+1) \cdot N! - N!}$$

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

$$\frac{[(N-1)! \cdot N] \cdot N!}{N! \cdot N!}$$

$$\frac{(N!)^2}{(N!)^2}$$

ALTERNATIVA (D)

$$\textcircled{7} \quad \frac{N! + (N-1)!}{(N+1)! - N!} = \frac{6}{25}$$

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$$\frac{N \cdot (N-1)! + (N-1)!}{N! (N+1) - N!} = \frac{6}{25}$$

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$$\frac{N(N-1)! + (N-1)}{N! (N+1-1)} = \frac{6}{25}$$

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$$\frac{N(N-1)! + (N-1)}{N \cdot N \cdot (N-1)!} = \frac{6}{25}$$

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$$\frac{N + (N-1)!}{N \cdot N} = \frac{6}{25}$$

$$N \cdot N = 25$$

$$N^2 = 25$$

$$N = \sqrt{25}$$

ALTERNATIVA (C)

$$N = 5$$

$$\textcircled{8} \quad 27! - 227$$

$$\begin{array}{r} 27! = \dots 999 \\ - 227 \\ \hline 9779 \end{array}$$

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DEZENA

ALTERNATIVA
(D)