TAREFA BÁSICA - FATORIAL

1 (A) $4! = 4.3.2.1$

$4! = 4.6$

$4! = 24$

(B) $5! - 6!$

$120 - 720$

-600

$5! = 5.4!$

$5! = 5.24$

$5! = 120$

$6! = 6.5!$ — 720

$6! = 6.120$ — x6

$6! = 720$ — 720

(C) $\frac{9!}{6!}$

$9! = 9.8.7.720$

$9! = 9.8.5040$

$9! = 9.40.320$

$9! = 362.880$

$\frac{362880}{720} = 504$

(D) $\frac{98!}{100!}$

$100! = 100.99.98!$

$\frac{98!}{100.99.98!} = \frac{1}{100.99} = \frac{1}{9900}$

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

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

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

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

ALTERNATIVA (A)

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

$4! = 4.3.2.1$

$4! = 24$

↓

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

↓

SOMENTE UMA SOLUÇÃO CO
TENDO UM NÚMERO PAR PO

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

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

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

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

ALTERNATIVA (A)

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

$4! = 4.3.2.1$

$4! = 24$

$\downarrow$

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

$\downarrow$

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

$\downarrow$

$\frac{24}{6} = 4$

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

⑤ $\frac{(N+1)! - N!}{(N+1)!} = \frac{7}{N+1} \rightarrow \frac{(N+1).N! - N!}{(N+1).N} = \frac{7}{N+1}$

$\frac{N!(N+1-1)}{N!(N+1)} = \frac{7}{N+1} \rightarrow \frac{N}{N+1} = \frac{7}{N+1}$ ALTERNATIVA (D)

$N = 7$

⑥ $(N-1)![(N+1)! - N!]$

$(N-1)!.[N+1.N! - N!]$

$(N-1)!.N!(N+1-1)$

$(N-1)!.N.N!$

$[(N-1)!.N].N!$

$N!.N!$

$(N!)^2$ ALTERNATIVA (D)

/ /
D S T Q Q S S

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

$\downarrow$

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

$\downarrow$

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

$\downarrow$

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

$\downarrow$

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

$N.N = 25$

$N^2 = 25$

$N = \sqrt{25}$

$N = 5$

ALTERNATIVA (C)

(8) $21! - 221$

$21! = \ldots 0000$

$- \quad 221$

9779

$\downarrow$

DEZENA

ALTERNATIVA (D)