data

Tarefa Básica

1 - a) $4!$

$4.3.2.1 = 24$ //

b) $5! - 6!$

$5! = 5.4! = 5.24 = 120$

$5! - 6!$

$5! - 6.5! \Rightarrow 5!(1-6)$

$5!(-5) = 120.-5 = -600$ //

c) $\frac{9!}{6!} = \frac{9.8.7.6!}{6!} = 504$ //

d) $\frac{98!}{100!} = \frac{98!}{100.99.98!} = \frac{1}{9.900}$ //

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

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

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

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

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

Letra a

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

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

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

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

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

Letra a

data

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

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

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

$n+2 = 4(n-1) = n+2 = 4n-4$

$n-4n = -4-2$

$-3n = -6\ (\times -1)$

$n = 6/3 = \boxed{2}$

Letra a

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

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

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

$\frac{n+1-1}{n+1} = \frac{7}{n+1}$

$\frac{n}{n+1} = \frac{7}{n+1}$

$n = 7$

Letra D

6) $\frac{(n-1)!\,[(n+1)!-n!]}{(n-1)!\,[(n+1)n!-n!]}$

$\frac{(n-1)!\,[n!(n+1-1)]}{(n-1)!\,[n!\cdot n]}$

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

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

Letra

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

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

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

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

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

$\frac{n+1}{n^2} = \frac{6}{25}$

$n+1 = 6 \rightarrow n = 6-1 = 5$

$n^2 = 25 = 5$

Letra C