

Calcule:

1.

$$\frac{7!}{4!} = \frac{7 \times 6 \times 5 \times 4!}{4!} = 7 \times 6 \times 5 = 210 //$$

2.

$$\frac{3! \cdot 5!}{4! \cdot 6!} = \frac{3! \cdot 5!}{4 \cdot 3! \cdot 6 \cdot 5!} = \frac{3! \cdot 5!}{3! \cdot 5!} \cdot \frac{1}{4 \cdot 6} = \frac{1}{24} //$$

3.

$$\frac{12! - 13!}{12!} = \frac{12! - 13 \cdot 12!}{12!} = \frac{12!}{12!} \cdot \frac{1 - 13}{1} = -12 //$$

Simplifique:

4.

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

5.

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

6.

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

$$(n+3) \cdot (n-1) = n^2 - n + 3n - 3 = n^2 + 2n - 3 //$$