

GEEN SAKREKENAAR MAG GEBRUIK WORD NIE!

- (1) Bepaal die som van die volgende uitdrukkings en skryf die antwoord in stygende magte van x :

$$-2x + x^7 - 3 + 5x^2 + 12x^4 \quad \text{en} \quad 4x^5 - 4x + 6x^7 - 18x^4 + 2$$

$$\begin{aligned} \therefore & (-2x + x^7 - 3 + 5x^2 + 12x^4) + (4x^5 - 4x + 6x^7 - 18x^4 + 2) \\ &= \underline{-2x} + \underline{x^7} - \underline{3} + \underline{5x^2} + \underline{12x^4} + \underline{4x^5} - \underline{4x} + \underline{6x^7} - \underline{18x^4} + \underline{2} \\ &= 1x^7 + 6x^7 + 4x^5 + 12x^4 - 18x^4 + 5x^2 - 2x - 4x - 3 + 2 \\ &= 7x^7 + 4x^5 - 6x^4 + 5x^2 - 6x - 1 \\ &= -1 - 6x + 5x^2 - 6x^4 + 4x^5 + 7x^7 \end{aligned}$$

- (2) Trek $(4mn^3 + 3mn - 5m^2n + 3)$ af van $(7mn - m^2n + 4mn^3)$ en gebruik jou antwoord om die volgende vrae te beantwoord:

$$\begin{aligned} \therefore & (7mn - m^2n + 4mn^3) - (4mn^3 + 3mn - 5m^2n + 3) \\ &= \underline{7mn} - \underline{m^2n} + \underline{4mn^3} - \underline{4mn^3} - \underline{3mn} + \underline{5m^2n} - \underline{3} \\ &= 7mn - 3mn - 1m^2n + 5m^2n + 4mn^3 - 4mn^3 - 3 \\ &= 4mn + 4m^2n - 3 \end{aligned}$$

(a) Uit hoeveel terme bestaan die uitdrukking. **3**

(b) Bepaal die graad van die uitdrukking in m . **2**

(c) Skryf die konstante term neer. **-3**

(d) Bepaal die waarde van die uitdrukking as $m = \frac{-3}{2}$ en $n = 4$.

$$\begin{aligned} & 4mn + 4m^2n - 3 \\ &= 4\left(\frac{-3}{2}\right)(4) + 4\left(\frac{-3}{2}\right)^2(4) - 3 \\ &= 4 \times 4\left(\frac{-3}{2}\right) + 4 \times 4\left(\frac{9}{4}\right) - 3 \\ &= \frac{16^8}{1} \times \left(\frac{-3}{2}\right) + \frac{16^4}{1} \times \left(\frac{9}{4}\right) - 3 \\ &= 8 \times -3 + 4 \times 9 - 3 \\ &= -24 + 36 - 3 \\ &= 9 \end{aligned}$$

(3) Vereenvoudig:

$$(a) \quad -2x^1y^3(2x^2y^2 - 3x^1y^1)$$

$$= -4x^3y^5 + 6x^2y^4$$

$$(b) \quad (y-3)(y+3)$$

$$= y^2 + 3y - 3y - 9$$

$$= y^2 - 9$$

$$(c) \quad 4p^1(p^1 - 3) + (2 + p^1)3$$

$$= 4p^2 - 12p^1 + 3(2 + p^1)$$

$$= 4p^2 - 12p^1 + 6 + 3p^1$$

$$= 4p^2 - 9p + 6$$

$$(d) \quad \frac{4}{5}k^4(20k^4 - 1)$$

$$= \frac{4}{5} \times \frac{20}{1} k^{4+4} - \frac{4}{5} k^4$$

$$= 4 \times 4 k^8 - \frac{4}{5} k^4$$

$$= 16k^8 - \frac{4}{5} k^4$$

$$(e) \quad (a^1 - 3b^1)(2a^1 + 3b^1)$$

$$= 2a^2 + 3ab - 6ab - 9b^2$$

$$= 2a^2 - 3ab - 9b^2$$

$$(f) \quad [(m-4)(m+4)]^2$$

$$= [m^2 - 16]^2$$

$$= (m^2 - 16)(m^2 - 16)$$

$$= m^4 - 16m^2 - 16m^2 + 256$$

$$= m^4 - 32m^2 + 256$$

$$(g) \quad (t^1 - 2)(3t^1 + 1 - t^2)$$

$$= 3t^2 + 1t - t^3 - 6t - 2 + 2t^2$$

$$= -t^3 + 5t^2 - 5t - 2$$

$$(h) \quad (x-5)^2 - (x+1)^2$$

$$= (x-5)(x-5) - (x+1)(x+1)$$

$$= (x^2 - 5x - 5x + 25) - (x^2 + 1x + 1x + 1)$$

$$= x^2 - 5x - 5x + 25 - x^2 - 1x - 1x - 1$$

$$= -12x + 24$$

(4) Bewys dat: $[(x - 2)^2 - (x + 2)^2]^2 = 64x^2$

$$\text{LK} = [(x - 2)^2 - (x + 2)^2]^2$$

$$= [(x - 2)(x - 2) - (x + 2)(x + 2)]^2$$

$$= [x^2 - 2x - 2x + 4 - (x^2 + 2x + 2x + 4)]^2$$

$$= [x^2 - 4x + 4 - x^2 - 2x - 2x - 4]^2$$

$$= [-8x]^2$$

$$= (-8x)(-8x)$$

$$= 64x^2$$

$$= \text{RK}$$