9/1/2020

17 $4x^4y^6z - 2x^3y^2 + 8x^5y^3$ $\qquad\qquad$ $a^{15} - a^{10} + a^5$

$4x^4y^6z - 2x^3y^2 + 8x^5y^3 =$ $\qquad$ $a^{15} - a^{10} + a^5 =$

$= 2x^3y^2\left(2xy^4z - 1 + 4x^2y\right)$ $\qquad$ $= a^5\left(a^{10} - a^5 + 1\right)$

18 $2ax^6 - a^6x =$ $\qquad\qquad\qquad$ $a^{10}x^8 + a^{11}x^7 + a^9x^9 =$

$\qquad = ax\left(2x^5 - a^5\right)$ $\qquad\qquad$ $= a^9x^7\left(ax + a^2 + x^2\right)$

38 $(x-1)(x+2)^2 + (x-1)^2(x+2) =$

$= (x-1)(x+2)\cdot\left[(x+2) + (x-1)\right] =$

$= (x-1)(x+2)\left(x+2+x-1\right) = (x-1)(x+2)(2x+1)$

39 $35(a+b)^5 - 7(a+b)^6 =$

$= 7(a+b)^5\cdot\left[5 - (a+b)\right] =$

$= 7(a+b)^5\left(5 - a - b\right)$

43 $2m^4(n+1)^4 + 4m^8(n+1)^5 =$

$$= 2m^4(n+1)^4 \cdot \left[1 + 2m^4(n+1)\right] =$$

$$= 2m^4(n+1)^4 \left(1 + 2m^4n + 2m^4\right)$$

46 $\dfrac{1}{3}t^3(t-1)^2 + \dfrac{2}{3}t^2(t-1)^4 =$

$$= \dfrac{1}{3}t^2(t-1)^2 \cdot \left[t + 2(t-1)^2\right] =$$

$$= \dfrac{1}{3}t^2(t-1)^2 \left[t + 2(t^2 - 2t + 1)\right] =$$

$$= \dfrac{1}{3}t^2(t-1)^2 \left(t + 2t^2 - 4t + 2\right) =$$

$$= \dfrac{1}{3}t^2(t-1)^2 \left(2t^2 - 3t + 2\right)$$

50 $x^{n+1}(y-1)^n - x^n(y-1)^{n+1} + x^n(y-1)^n =$

$$= x^n(y-1)^n \cdot \left[x - (y-1) + 1\right] =$$

$$= x^n(y-1)^n \left(x - y + 1 + 1\right) =$$

$$= x^n(y-1)^n \left(x - y + 2\right)$$

RACCOGLIMENTO (A FATTOR COMUNE) PARZIALE

53 $ax + x + a + 1 =$

$= x(a+1) + 1 \cdot (a+1) = \quad x(a+1) + (a+1)$

$= (a+1)(x+1)$

OSSERVIAMO CHE ERA POSSIBILE ANCHE RACCOGLIERE DIVERSAMENTE

$ax + x + a + 1 = a(x+1) + (x+1) =$

$= (x+1)(a+1)$

54 $a^3 + 2a^2 - a - 2 =$

SI RACCOGLIE IL "MENO"

$= a^2(a+2) - (a+2) =$

$= (a+2)(a^2 - 1)$

59 $3x^2 + xy - 6xz - 2yz =$

$= x(3x+y) - 2z(3x+y) =$

$= (3x+y)(x-2z)$

67 $4x - 4 - 3(x-1)^2 =$

$= 4(x-1) - 3(x-1)^2 =$

$= (x-1) \cdot \left[4 - 3(x-1) \right] =$

$= (x-1)(4 - 3x + 3) = (x-1)(7 - 3x)$

87 $3a^4 + 6a^3 + 9a^2 + 18a =$

$= 3a\left(a^3 + 2a^2 + 3a + 6 \right) =$

$= 3a\left[a^2(a+2) + 3(a+2) \right] =$

$= 3a\left[(a+2)(a^2+3) \right] =$

$= 3a(a+2)(a^2+3)$

97 $a^3bx + a^3by - a^2b^2x - a^2b^2y =$

$= a^2b\left[ax + ay - bx - by \right] =$

$= a^2b\left[a(x+y) - b(x+y) \right] =$

$= a^2b(x+y)(a-b)$

96 $bx^3 + ax^3 - 2x^3 + bx^2 + ax^2 - 2x^2 =$

$$= x^2 \left[bx + ax - 2x + b + a - 2 \right] =$$

$$= x^2 \left[x(b + a - 2) + (b + a - 2) \right] =$$

$$= x^2 (b + a - 2)(x + 1)$$