

R3 day 1

Tuesday, November 8, 2016 8:21 AM

What's a polynomial?

Monomial

$$y = 5x^2 + 0 \cdot x + 0$$

$$y = 5x^0$$

Binomial

$$y = -3x^{17} - 52$$

Trinomial

$$y = 4x^3 + 5x - 3x^{10}$$

$$y = \pi x^3 - \sqrt{2} x^2$$

$$y = \frac{1}{4} x^{52} - 17.3 x^{27}$$

$$y = a_1 x^n + a_2 x^{n-1} + a_3 x^{n-2} + \dots + a_n,$$

all exponents are whole numbers (0, 1, 2, ...)

real number coefficients

$$\text{Simplify: } [4 - \{2 - (3 + 7(2 + x))\}]$$

$$= [4 - \{2 - (3 - 14 - 7x)\}]$$

$$= [4 - \{2 - (-11 - 7x)\}]$$

$$= [4 - \{2 + 11 + 7x\}]$$

$$= 4 - (13 + 7x)$$

$$= -9 - 7x$$

Expand and simplify:  $(2 + 4x)^3$

$$(2 + 4x)(2 + 4x)(2 + 4x)$$

$$(2+4x)(2+4x)(2+4x)$$

$$(2+4x)(4+16x+16x^2)$$

$$= 8 + 32x + 32x^2 + 16x + 64x^2 + 64x^3$$

$$= 64x^3 + 96x^2 + 48x + 8$$

Expand and simplify:

$$(5q+2v)^2 - (5q+2v)(5q-2v)$$

$$25q^2 + 20qv + 4v^2 - [25q^2 - 4v^2]$$

$$= \cancel{25q^2} + 20qv + 4v^2 - \cancel{25q^2} + 4v^2$$

$$= 20qv + 8v^2$$

Pear Deck!

Is this an example of a polynomial?

$$y = 4x^3 - 2x^5 + 17$$

Is this an example of a polynomial?

$$y = 0.2x^5 - \frac{1}{4}x^7 - \frac{17}{3}$$

Is this an example of a polynomial?

$$y = \frac{x}{x+4} - 2$$

Is this an example of a polynomial?

$$y = 18x^{3/4} - 17x^{1/2}$$

Is this an example of a polynomial?

$$y = \sqrt{7}x^5 - \sqrt{2}x^4$$

Is this an example of a polynomial?

$$y = 2^{x+5} - 6$$

Simplify:

$$2 + 2 \left\{ 2 - 2 \left[ 2 + 2^2 - 2(2+2) \right] \right\}$$

Circle the mistakes in different colors:

$$\begin{aligned} & 3(x-2)^2 + 5x-7 \\ &= 3(x-2)(x-2) + 5x-7 \\ &= (3x-6)(3x-6) + 5x-7 \\ &= 9x^2 - 36x - 36 + 5x-7 \\ &= 9x^2 - 31x - 42 \end{aligned}$$

Expand and simplify. What is the coefficient of the  $x^2$  term?

$$(2x+5)^3$$

Simplify. What is the coefficient of the  $mx$  term?

$$2(4x + 3m)^2 - (5x + 6m)(m - x)$$