

Algebra II

4-1

Polynomials

Oct 23-10:01 AM

Label the parts of the following Polynomial.

The diagram shows the polynomial $3x^3y^3 - 5x^2y^4 + 2xy^3 - 7$ with handwritten annotations:

- coefficients** (green): Arrows point to the numbers 3, 5, and 2.
- exponents** (blue): Brackets and arrows point to the powers of x and y in each term (3, 3, 2, 4, 1, 3).
- terms (monomial)** (red): Brackets group each of the four terms: $3x^3y^3$, $-5x^2y^4$, $+2xy^3$, and -7 .
- constant term** (black): An arrow points to the -7 .

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Which of the following do you think are like terms?

$3x^4$

$-2x^2y^3$

y^4

$5x^3y^4$

$7y^3x^2$

6

$4x^3$

$-8x^3y^2$

$9y^4$

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What do you think is the degree of each monomial?

monomial degree

$8x^3 \longrightarrow \underline{3}$

$-7x^4y^2 \longrightarrow \underline{6} \quad 6, 8, 2, 4,$

$6x^5y^1 \longrightarrow \underline{6}$

$19 \longrightarrow \underline{0}$

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What do you think is the degree of this Polynomial?

$$3x^{\overbrace{5}^9}y^4 - 9x^{\overbrace{3}^7}y^4 + 11x^{\overbrace{1}^8}y^7 \longrightarrow \underline{\quad 9 \quad}$$

$24, 10, 9,$
 ~~$9 - 7 + 8$~~

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Simplify, arranging terms in order of decreasing degree of x . (pg 169)
 Then write the degree of the polynomial.

1) $2 - x^2 + 3x + 2x^2 - 5x$

$x^2 - 2x + 2 \longrightarrow \text{degree } 2$

a) add the polynomials and b) subtract the second polynomial from the first.

9) $5m - 4, 2m + 3$

a) $(\underline{5m-4}) + (\underline{2m+3})$

$7m - 1$

b) $(\underline{5m-4}) - (\underline{2m+3})$

$\underline{5m-4} - \underline{2m-3}$
 $3m - 7$

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Simplify.

$$17) 3(x^2 - 2x + 4) + 2(5x^2 - 7)$$

$$\underline{3x^2} - \underline{6x} + 12 + \underline{10x^2} - 14$$

$$13x^2 - 6x - 2$$

$$13x^2 - 6x - 2$$

$$13x^2 - 2 - 6x$$

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1-27 all

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