

Vocabulary

Degree: Highest exponent

Leading coefficient: the coefficient with the highest exponent.

Standard form: ^{when} the exponents are written in descending order

$$\underline{-3x^4} + 6x - 4$$

<u>Name</u>	<u>Degree</u>	<u>Ex</u>
Constant	0	3
Linear	1	$3x - 2$
Quadratic	2	$4x^2 - 4x - 3$
Cubic	3	$6x^3$

By term Types of Polynomials

1 Monomial $6, x, 7y, -9x^3yz^5$

2 Binomial $x-9, 7x^2-5x$

3 Trinomial $9x^2+5x-2$

many Polynomial $-8x^3+6x^2-8x+1$

Non-Examples

8^x $\frac{4}{x}$ x^{-3}

Leading Coefficient 3 degree $9x^0=9$
 $(5)x^3 + x^2 - 7x + (9)$

terms: $5x^3, x^2, -7x, 9$
 coefficient: $5, 1, -7, 9$

$7xy^2$
 D: 3
 LC: 7
 constant: none

$5x^2+4x$
 D: 2
 LC: 5
 C: none

$-8x^3+2x^2-8x-5$
 D: 3
 LC: -8
 C: -5

$6x-x^3+4$
 $-x^3+6x+4$
 D: 3
 LC: -1
 C: 4

Adding

$$1. (-2x - 9) + (x + 4)$$

$$\textcircled{-2x} - 9 + \textcircled{x} + 4$$

$$\boxed{-x - 5}$$

$$2. (-5x + 17) + (-9x + 4)$$

$$-5x + 17 - 9x + 4$$

$$\boxed{-14x + 21}$$

$$3) (3x^2 - 2x + 1) + (6x^2 + 3)$$

$$9x^2 + x + 4$$

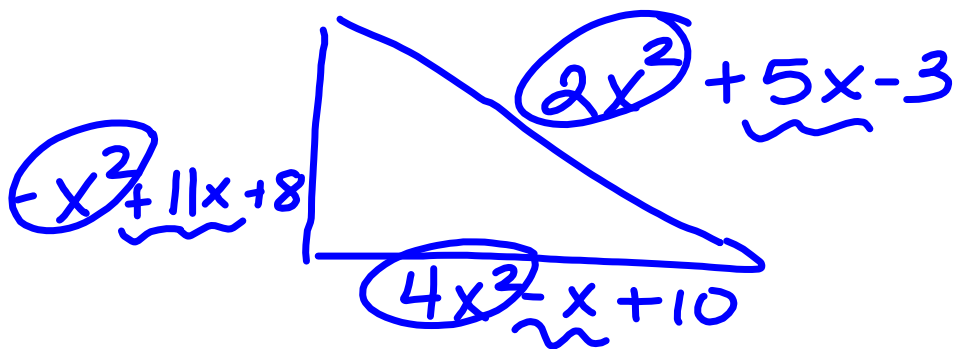
$$4) (6x^3 - 12x + 1) + (8x^2 + 10x - 6)$$

$$6x^3 + 8x^2 - 2x - 5$$

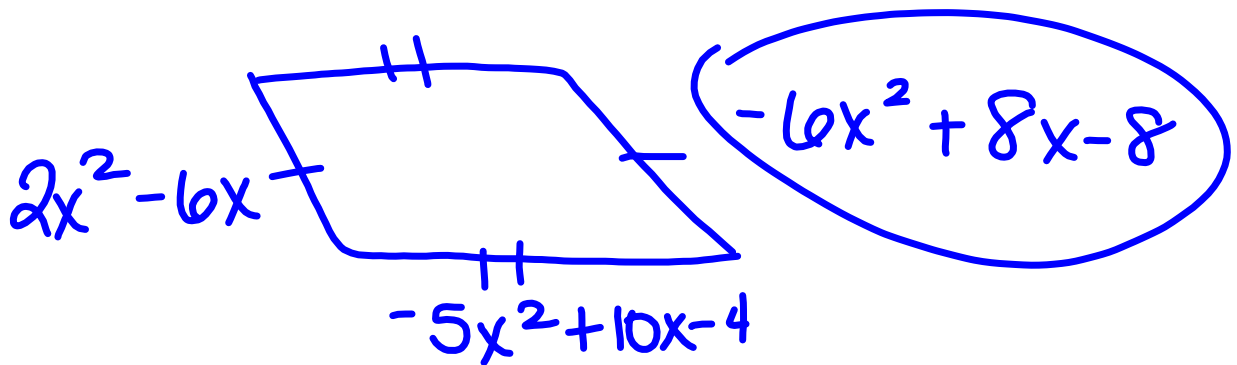
$$5) 5(4x^3 - 2x^2 + 1) + 3(7x^2 - 5x - 4)$$

$$\textcircled{20x^3} - \textcircled{10x^2} + 5 + \textcircled{21x^2} - \textcircled{15x} - 12$$

$$20x^3 + 11x^2 - 15x - 7$$



$$5x^2 + 15x + 15$$



Subtracting

$$\underline{\text{Ex 1}} \quad (7x+10) - (3x-8)$$

$$\textcircled{7x} + 10 - \textcircled{3x} + 8$$

$$4x + 18$$

$$\underline{\text{Ex 2}} \quad (-14x + 3) - (-2x + 5)$$

$$-14x + 3 + 2x - 5$$

$$-12x - 2$$

$$\underline{\text{Ex 3}} \quad (5x^2 + 3x + 8) - (2x^2 - 2x - 9)$$

$$5x^2 + 3x + 8 - 2x^2 + 2x + 9$$

$$3x^2 + 5x + 17$$

$$\underline{\text{Ex 4}} \quad (4x^3 + x^2 - 9x - 8) - (7x^3 + 2x + 6)$$

$$4x^3 + x^2 - 9x - 8 - 7x^3 - 2x - 6$$

$$-3x^3 + x^2 - 11x - 14$$

$$\underline{\text{Ex 5}} \quad -7(2x^4 + 3x^3 + x - 1) - 5(-3x^3 + 4x^2 - 8x - 6)$$

$$-14x^4 - 6x^3 - 20x^2 - 47x + 37$$

$$-14x^4 - 21x^3 - 7x + 7 - 15x^3 - 20x^2 - 40x + 30$$