# Curriculum Outcome

- (PR 5)Demonstrate an understanding of polynomials (limited to of degree less than or equal to 2).
- (PR 6) Model, record and explain the operations of addition and subtraction of polynomial expressions, concretely, pictorially and symbolically (limited to polynomials of degree less than or equal to 2).
- (PR 7) Model, record and explain the operations of multiplication and division of polynomial expressions (limited to polynomials of degree less than or equal to 2) by monomials, concretely, pictorially and symbolically.

**Student Friendly:**
**"Subtracting Polynomials "**

***Warm Up*** Name: _____

1) For each of the following state:

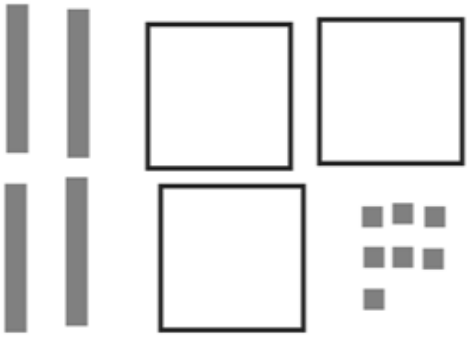
| | a) $-4x^{13} -2x^7 + 5$ | b) $2y^{22} +3x^{27}$ | c) 13 | d) $14x^5$ | e) $\sqrt{x}$ |
|---|---|---|---|---|---|
| Type: | | | | | |
| Degree: | | | | | |
| Variables: | | | | | |
| Coefficients: | | | | | |
| Constants: | | | | | |

2) Write in proper order:

$$23x^{17} -36x^{21} - 15 - 9x^{10} - 5x^6$$

Answer: _____

3) Write the expression that represents the below algebra tiles :



_____

Answer

4) Collect like terms and **THE SIMPLIFY**

$5+x -2x^2 +x -7 +3x^2 -2x +6 -x^3 + 4x^2 - 6x^3$

5) Show all work : $(-17x^2 -3x +12) + (-3x^2 + 18x -13)$

6) If the sum of two polynomials is $3x^3 -5x +7$ and one polynomial is the following, determine the other polynomial. a) $-7x^2 +6x -2$

1) For each of the following state:

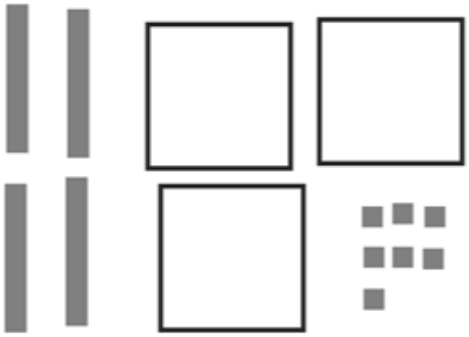
| | a) $-4x^{13} - 2x^7 + 5$ | b) $2y^{22} + 3x^{27}$ | c) 13 | d) $14x^5$ | e) $\sqrt{x}$ |
|---|---|---|---|---|---|
| Type: | Tri | bi | Mono | Mono | ∅ |
| Degree: | 13 | 27 | 0 | 5 | ∅ |
| Variables: | x | x, y | ∅ | x | x |
| Coefficients: | -4, -2 | 2, 3 | ∅ | 14 | ∅ |
| Constants: | 5 | ∅ | 13 | ∅ | ∅ |

2) Write in proper order:

$23x^{17} - 36x^{21} - 15 - 9x^{10} - 5x^6$

Answer: $-36x^{21} + 23x^{17} - 9x^{10} - 5x^6 - 15$

3) Write the expression that represents the below algebra tiles :



$3x^2 - 4x - 7$

Answer

4) Collect like terms and **THE SIMPLIFY**

$5+x-2x^2+x-7+3x^2-2x+6-x^3+4x^2-6x^3$

$-x^3-6x^3-2x^2+3x^2+4x^2+x+x-2x+5+6-7$

$-7x^3+5x^2+4$

5) Show all work : $(-17x^2-3x+12)+(-3x^2+18x-13)$

$-17x^2-3x^2-3x+18x+12-13$

$-20x^2+15x-1$

6) If the sum of two polynomials is $3x^2-5x+7$ and one polynomial is the following, determine the other polynomial.

a) $-7x^2+6x-2$

$+(10x^2-11x+9)$

$3x^2-5x+7$

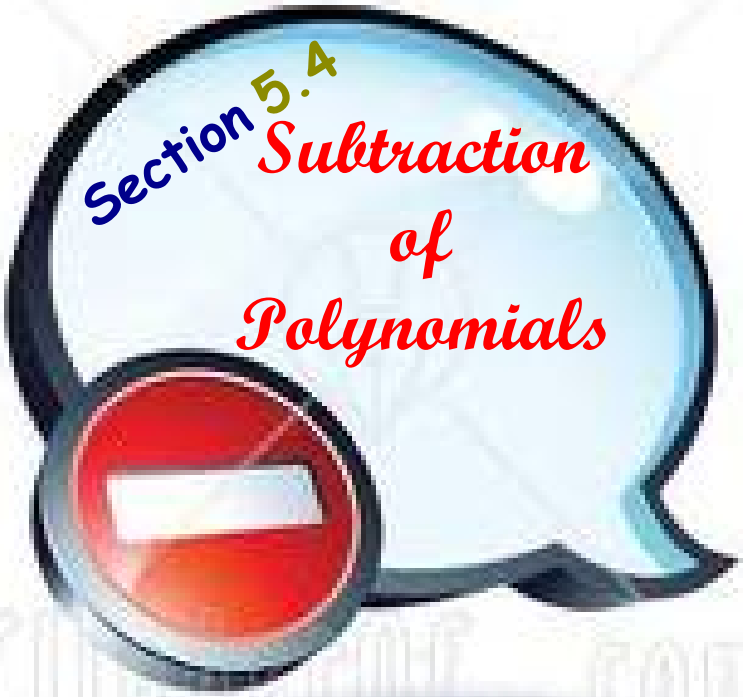
## Things you already know...

18 - 5= 13

12 + (+5)= 17

-16 + (+11)= -5

15x - 31x= -16x


Section 5.4
Subtraction
of
Polynomials


$(5x - 11) - (3x - 6)$

Method: 1

Carry Through

$5x - 11 - 3x + 6$

$5x - 3x - 11 + 6$

$2x - 5$

$5 - (-3) = 8$

$(5x - 11) - (3x - 6)$

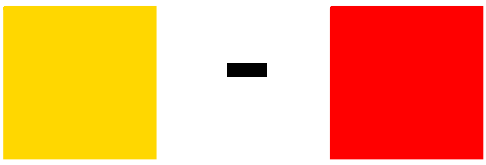
Method: 2

Add the Opposite!

$(5x - 11) + (-3x + 6)$

$5x - 3x - 11 + 6$

$2x - 5$

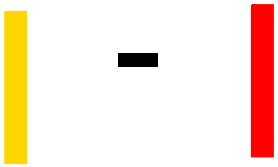


$5 + (+3) =$

$8$

$-x^2 + (+x^2)$

$x^2 + x^2 = 2x^2$



You Try

$(20x^2 + 12x - 7) - (13x^2 - 2)$

$20x^2 + 12x - 7 - 13x^2 + 2$

$20x^2 - 13x^2 + 12x - 7 + 2$

$7x^2 + 12x - 5$

Try This!

$(6x^2-4x+2)-(-8x^2-9x+2)$

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

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

$14x^2+5x$

Example 3.

The height of a ball kicked on Earth can be modelled by: $18 + 35t - 4.9t^2$
On Mars the height is modelled by: $52 + 26t - 1.3t^2$
Find a formula for the difference in the height of the ball on Mars as compared to Earth.

Mars - Earth

$$(52 + 26t - 1.3t^2) - (18 + 35t - 4.9t^2)$$

$$52 + 26t - 1.3t^2 - 18 - 35t + 4.9t^2$$

$$4.9t^2 - 1.3t^2 + 26t - 35t - 18 + 52$$

$$3.6t^2 - 9t + 34$$

# Class/Homework

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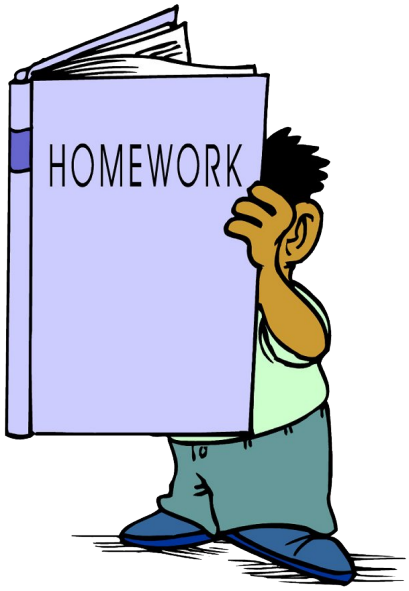
(No algebra tiles just combine like terms and subtract)

#7ac
#8 aceh
#10



# Class/Homework

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(No algebra tiles just combine like terms and subtract)

#7
#8 aceh
#10
#12 just correct
#15 a,d