

Adding & Subtracting Polynomials Review Part 2

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Mathematics 9
Polynomials
Adding & Subtracting Polynomials Review Part 2

A. Examples

1. Evaluate each polynomial for $x = 3$.

a) $(4x + 2) - (3x + 3)$
 $x + 5$
 $(3) + 5$
 $= \boxed{8}$

b) $(x^2 - 3x) - (2x^2 + 2x)$
 $x^2 - 3x - 2x^2 - 2x$
 $-x^2 - 5x$
 $-(3)^2 - 5(3)$
 $-9 - 15$
 $= \boxed{-24}$

c) $(4x - 1) + (2x + 3) - (-6x - 5)$
 $4x - 1 + 2x + 3 + 6x + 5$
 $12x + 7$
 $12(3) + 7$
 $36 + 7$
 $= \boxed{43}$

d) $(x^3 - 3x^2 + 2x) - (2x^3 + x^2 + 2x)$
 $x^3 - 3x^2 + 2x - 2x^3 - x^2 - 2x$
 $-x^3 - 4x^2$
 $-(3)^3 - 4(3)$
 $-27 - 4(9)$
 $-27 - 36$
 $= \boxed{-63}$

To Solve

- a) Simplify the expression first.
- b) Then substitute in the value for x and evaluate.

2. Evaluate each polynomial for $x = 2$ and $y = -1$.

a) $(4x - 2y) + (3x - 6y)$

$$\begin{aligned} & 7x - 8y \\ & 7(2) - 8(-1) \\ & 14 + 8 \\ & = \boxed{22} \end{aligned}$$

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

$$\begin{aligned} & 3x^2 - y - 6 \\ & 3(2)^2 - (-1) - 6 \\ & 3(4) + 1 - 6 \\ & 12 + 1 - 6 \\ & = \boxed{7} \end{aligned}$$

c) $(2x - 5y) + (2x - 3y)$

$$\begin{aligned} & (2x - 5y) + (2x - 3y) \\ & 4x - 8y \\ & 4(2) - 8(-1) \\ & 8 + 8 \\ & = \boxed{16} \end{aligned}$$

d) $(3x^2 - y) - (6x^2 - 7y)$

$$\begin{aligned} & (3x^2 - y) - (6x^2 - 7y) \\ & 3x^2 - y - 6x^2 + 7y \\ & -3x^2 + 6y \\ & -3(2)^2 + 6(-1) \\ & -3(4) + 6(-1) \\ & -12 - 6 \\ & = \boxed{-18} \end{aligned}$$

e) $(3x^2 - 5xy + 2) - (2x^2 - xy - 4)$

$$\begin{aligned} & (3x^2 - 5xy + 2) - (2x^2 - xy - 4) \\ & 3x^2 - 5xy + 2 - 2x^2 + xy + 4 \\ & x^2 - 4xy + 6 \\ & (2)^2 - 4(2)(-1) + 6 \\ & 4 - 4(2)(-1) + 6 \\ & 4 + 8 + 6 \\ & = \boxed{18} \end{aligned}$$

Assignment: Adding & Subtracting Polynomials Review Part 2 Assignment

Name: _____

Adding & Subtracting Polynomials Review Part 2 Assignment

1. Evaluate the following if $x = 2$.

a) $4x + 2 - 5x - 5$

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

c) $3 - 4x + x^2 - 2x - 1 + x^2$

d) $2x^2 - 5x - 7 - x^2 + 2x + 2$

e) $x^3 + 2x^2 - 3x + 2x^3 - x + 2x^2$

f) $3x^3 - 2x^2 + x - 5 - x^3 + 2x^2 - 3x + 4$

g) $(3x + 4) - (2x + 6) + (x - 1)$

h) $(x^2 - 4x + 5) + (2x^2 - 5x - 2)$

2. Evaluate the following if $x = 3$ and $y = 2$.

a) $2x - 5y - 4x + 2y$

b) $-2x^2 - 3y^2 + 3x^2 + 4y^2$

c) $(3x + 2y) + (2x - 4y)$

d) $(4x - 3y) - (-2x + y)$

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

f) $(2x^2 - 4y^2 + 2) - (6 - 4y^2 - x^2)$

g) $(3x^2 - 2y^2) - (3 + 2x^2) + (y^2 - 2)$

h) $(3x - 2y + 3) - (4y - 1 + 5x) - (x - 3 + 2y)$

Answers

- | | |
|-------------|----------|
| 1. a) -5 | b) 0 |
| c) -2 | d) -7 |
| e) 32 | f) 11 |
| g) 1 | h) -3 |
| i) 7 | j) -34 |
| | |
| 2. a) -12 | b) 13 |
| c) 11 | d) 10 |
| e) 23 | f) -12 |
| g) 0 | h) -18 |