

WORKSHEET 5.3: ADDING POLYNOMIALS

Follow the steps below to find the sum of polynomials:

1. Add the coefficients of similar terms.
2. Add any constants (numbers that have no variables).

EXAMPLES

$(3x + 4) + (-2x + 7)$: Add $3x$ and $-2x$ because they are similar terms. Add 4 and 7 because they are constants. The sum is $x + 11$.

$(7x^2 + 2x - 3) + (-6x^2 + 8x - 9)$: Add $7x^2$ and $-6x^2$ because they are similar terms. Add $2x + 8x$ because they are similar terms. Add -3 and -9 . The sum is $x^2 + 10x - 12$.

DIRECTIONS: Find the sum.

1. $(3x + 3) + (4x + 2)$

2. $(x^2 + 2x + 1) + (x^2 - x - 1)$

3. $(-2a + 3b) + (8a + b + 1)$

4. $(8x^2 + 3) + (-4x^2 + x + 7)$

5. $(x - 3) + (-x - 4)$

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

7. $(8a^2 - 9) + (a^2 + 4)$

8. $(3y + 2xy - 10x) + (-y - 7xy - x)$

9. $(3a + 6b - 4) + (-3a - 6b + 8)$

10. $(x^2 + 7x - 12) + (3x^2 - 9)$



CHALLENGE: Explain why the sum of polynomials will never contain any similar terms.

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DIRECTIONS: Find the sum.

1. $(3x + 3) + (4x + 2)$

$$7x + 5$$

2. $(x^2 + 2x + 1) + (x^2 - x - 1)$

$$2x^2 + x$$

3. $(-2a + 3b) + (8a + b + 1)$

$$6a + 4b + 1$$

4. $(8x^2 + 3) + (-4x^2 + x + 7)$

$$4x^2 + x + 10$$

5. $(x - 3) + (-x - 4)$

$$-7$$

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

$$3x^2 + xy + 2$$

7. $(8a^2 - 9) + (a^2 + 4)$

$$9a^2 - 5$$

8. $(3y + 2xy - 10x) + (-y - 7xy - x)$

$$2y - 5xy - 11x$$

9. $(3a + 6b - 4) + (-3a - 6b + 8)$

$$4$$

10. $(x^2 + 7x - 12) + (3x^2 - 9)$

$$4x^2 + 7x - 21$$



CHALLENGE: Explain why the sum of polynomials will never contain any similar terms.

The sum of polynomials will never contain any similar terms because like terms must be combined when added.