Name _____ **Period** _____ **Date** _____

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

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WORKSHEET SUBTRACTING POLYNOMIALS

Follow the steps below to subtract polynomials:

1. Add the opposite of each term of the polynomial you are subtracting.
2. Simplify by combining similar terms.
3. Add any constants.

EXAMPLES

$(4x - 7) - (3x - 4) = 4x - 7 + (-3x) + 4 = x - 3$

$(3x^2 - 4x + 1) - (-2x^2 + 7x - 9) = 3x^2 - 4x + 1 + 2x^2 + (-7x) + 9 = 5x^2 - 11x + 10$

$(-4a^2 + ab - b) - (-6a^2 - 4ab + 3b) = -4a^2 + ab - b + 6a^2 + 4ab + (-3b) = 2a^2 + 5ab - 4b$

DIRECTIONS: Find the difference.

1. $(7x - 1) - (2x - 6)$
2. $(-3x^2 + 9) - (4x^2 - 2)$
3. $(-3y^2 - 7) - (6y^2 - 9)$
4. $(4x^2 - 3xy - y) - (2x^2 - 7xy - 8)$
5. $(3x^2 + 4x - 10y^2) - (4x^2 - 5x + y^2)$
6. $(-ab + 4) - (4a^2 + 10ab - 12)$
7. $(y^2 - 7) - (3y^2 + 10y - 1)$
8. $(8a - 4c + 10) - (6a - 7b - 2c + 9)$
9. $(12a^2 - 3ab + 4) - (-12a^2 + 4ab - 1)$
10. $(y^2 - y + 1) - (3y^2 - 7y - 12)$