



Name _____ Date _____ Period _____

ADD AND SUBTRACT POLYNOMIAL EXPRESSIONS WORKSHEET

Example: $(x^2 + 6x - 9) + (2x^2 - 4x + 7)$

Combine like terms: $(x^2 + 2x^2) + (6x - 4x) + (-9 + 7)$ **Add:** $3x^2 + 2x - 2$

Directions: Simplify the expressions.

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

2. $(x + 3) + (x^2 - 5x + 7)$

3. $(4y^2 + 7y - 4) - (2y^2 - 2y + 4)$

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

5. $(4x^2 + 7x - 9) + (3x^2 - 4x + 2)$

6. $(3c^3 + 4c^2 - 9c + 3) + (2c^3 - 2c + 8)$

7. $(x^2 + 3x - 8) + (x^2 - 4x + 6) - (2x^2 + 5x - 9)$

8. $(3a^3 + a - 8) - (2a^2 - 7a + 2) + (a^3 - a^2 + 4a - 9)$

9. $(3x^2 + 5x + 2) - (4 - 2x) + (5x^2 + 7)$

10. $(2b^2 + 8ab^3 + 4b - 5) - (2 + 9b - 5ab^3)$

11. Candice is an interior designer and she is currently trying to change the look of a room. Candice found that the area of a room could be given by the expression $3x^2 + 2x$ and that the area of a rug, which she wants to spread on the floor, is given by the expression $x^2 + 24x - 144$. What expression represents the area of the room not covered by the rug?

12. Joey and Katie have invested some of their money in the stock market, which has been fluctuating over time. The projected value of Joey's assets after t years is $t^3 + 2t^2 - 3t + 400$. Katie's projected assets after t years is $t^4 - 5t^2 + 100$.

a) How much money did each of them initially invest?

b) What is their combined wealth after five years?

c) What is their combined wealth after t years?

13. Two models for the number of people (in 1000's) from two towns A and B suffering from a common disease, t years after 2000 are given by the two polynomials $P_A = 0.45t^2 - 1.2t + 90$ and $P_B = 0.27t^2 + 0.5t - 20$. Which polynomial can be used to find the total number of patients suffering from the disease in the two towns?

14. A triangle has a perimeter of $10a + 3b + 12$ and has sides of length $3a + 8$ and $5a + b$, what is the length of the third side?

15. Given the perimeter of the triangle below, find the missing side. $P = 2x^3 + 4x^2 + 6x + 3$

