Adding and Subtracting Polynomials   Name: _____

1) Identify the mistake in the problem and then determine the correct solution.

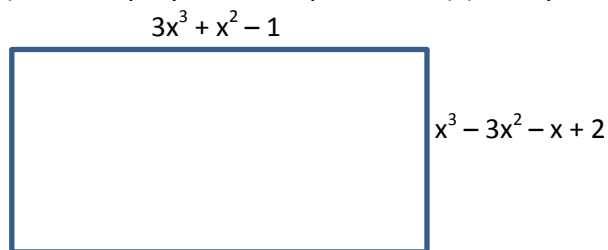$(2x^3 - 3x^2 + 5x - 1) + (3x^3 - 3x^2 - 2x + 4) = 5x^6 - 6x^4 + 3x^2 + 3$

2) Identify the mistake in the problem and then determine the correct solution.

$(4x^3 + 4x^2 - 8x) - (8x^2 - 16x + 4)$
$4x^3 + 4x^2 - 8x - 8x^2 - 16x + 4$
$4x^3 - 4x^2 - 24x + 4$

3) Write a polynomial expression P(x) to represent the perimeter of the rectangle.

$3x^3 + x^2 - 1$

$x^3 - 3x^2 - x + 2$

Simplify each expression

4) $(-4k^4 + 14 + 3k^2) + (-3k^4 - 14k^2 - 8)$ 5) $(12a^5 - 6a - 10a^3) - (10a - 2a^5 - 14a^4)$

6) $(-9v^2 - 8w) + (-2uw - 2u^2 + w^2) - (4uw - v^2)$

7) $(-9xy^3 - 9x^4y^3) - (3xy^3 + 7y^4 - 8x^4y^4) + (3x^4y^3 + 2xy^3)$

8) An electronics manufacturing company makes electronics for home theater systems. The cost of making the electronics is modeled by the equation $C(t) = 4t^3 - 3t + 150$, where t represents the number of electronics that are made. The equation $S(t) = 4t^3 + 5t^2 + 235$ represents the amount of money the company makes selling t number of electronics. Determine an equation P(t) that represents the profit the company makes from selling t electronics. Evaluate P(11) and describe its meaning using a complete sentence.

9) A circular courtyard has an area of $A(x) = 10 + 12x^2$. There are two rectangular flower beds in the courtyard. Write an equation G(x) that would represent the amount of grass in the lawn area, and then evaluate G(4).
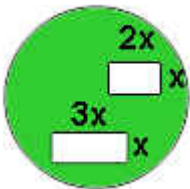
10) The cost of producing n toys at a factory is given by the polynomial $A(n) = 0.5n^2 + 3n + 12$. The cost of packaging is $P(n) = 0.25n^2 + 5n + 4$. Write an equation C(n) that givens the total cost of producing and packaging n toys. Evaluate and interpret the meaning of C(150).