Math III   Name_____ ID: 1

Adding and Subtracting Polynomials

Date_____ Period_____

Simplify each expression.

1) $\left(8x^4 - 7x\right) - \left(6x^2 + 5x^4 + 3x\right)$

2) $\left(4x^4 - 7x\right) - \left(6x^3 + 6x^4 - 2x\right)$

3) $\left(6b^3 + 4b^2\right) - \left(4b^2 + 6b^4 - 3b^3\right)$

4) $\left(2p - 4\right) + \left(4p - 4 - 2p^3\right)$

5) $\left(4r^4 - 4r\right) + \left(r^3 - 5r - 3r^4\right)$

6) $\left(2 - 4n^4\right) - \left(2n^4 + 8n^3 - 8\right)$

7) $\left(6n - 6\right) + \left(4 + 3n - 3n^2\right)$

8) $\left(7x^3 + 1\right) + \left(3x + 7 - 3x^3\right)$

9) $\left(7r^2 + 7r^3\right) - \left(2r^4 + 5r^2 - r^3\right) + \left(3r^3 + 8r^2\right)$

10) $\left(4x^3 + 8x^2\right) - \left(4x + 2 - 3x^3\right) + \left(6 + 4x\right)$

11 Jeanette and Tim find the answer to $(3x^2 - 5x) - (4 - 2x)$. Jeanette claims the simplified answer has three terms Tim says it only has two terms. Who is correct? How do you know?

12 Ross has $(8x - 5)$ tickets for Chuck E Cheese. He is going to play today and wants to buy a prize that is $(15x + 1)$ tickets. How many tickets must he win to have enough tickets to buy the prize?

**13** Write an expression for the area of the rectangle.

3x + 2

4x + 1
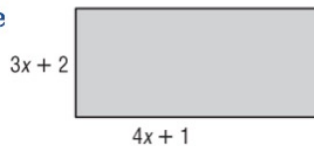
14 The profit a business makes is found by subtracting the cost to produce an item C from the amount earned in revenue R. The cost to produce and the sales amount could be modeled by the following equations, where x is the number of items produced.
$C = 100x^2 + 500x - 300$
$R = 150x^2 + 450x + 200$
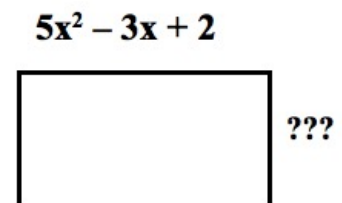Find an equation that models the profit.

Find the missing side of a shape.

15 - 17

$2x^2 - 5$??? $3x^2 + 9x$

Perimeter
$5x^2 + 7x + 12$

$9ab + 8a^2$ $4a^2 - 4ab$??? $7b^2 - 2ab$
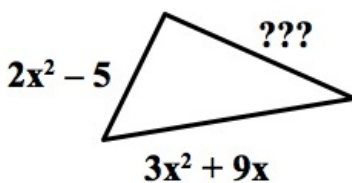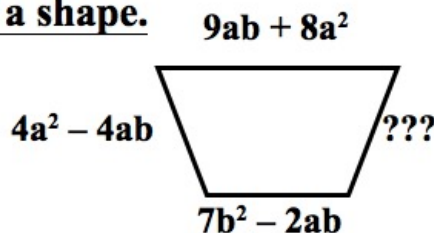
Perimeter
$9b^2 - 2ab + 12a^2$

$5x^2 - 3x + 2$???

Perimeter
$14x^2 + 4x - 8$