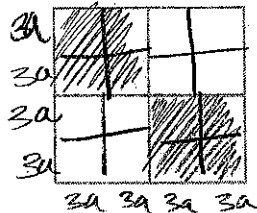Algebra 1

Name **Key**

Combining Polynomials- Jigsaw

1. A floor game uses a grid represented by two dark gray spaces and two white spaces. If each floor grid has four squares, and the side of each square is represented by 3a, what expression represents the area of the entire floor grid?
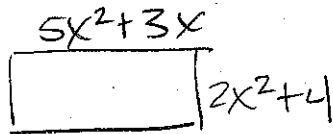
mult.

$12a\,(12a) = \boxed{144a^2}$. 12a

2. The lengths of the correct paths through a maze are represented by $3x^2 + 6$, $2x^2 - x$, $2x + 2$, $5x^2 - 3$, $-4x + 1$, and $9x + 3$. Write an expression that represents the length of the correct path through the maze.

ADD.

$\boxed{6x^2 + 14x + 9}$ L perimeter

3. While Stacey loves the wild rabbits in her back yard, she would like to keep the little critters out of her vegetable garden. If her vegetable garden is a rectangle whose width is represented by $5x^2 + 3x$ and whose length is represented by $2x^2 + 4$, write an expression that represents the amount of fencing needed to enclose the veggie garden.

ADD.

$5x^2 + 3x$

$2x^2 + 4$

L perimeter $4x^2 + 8$

$2(2x^2 + 4) + 2(5x^2 + 3x)$ ⟹ $10x^2 + 6x$

$\boxed{14x^2 + 6x + 8}$

4. In the year 1995, the average cost of a cellphone could be modeled by the expression $-10t^2 + 1600$ where t is the number of years since 1995. By the year 2009 the average cost had changed, so it could be modeled by the expression $-18t^2 + 800$. Find the difference in the average costs for a cellphone between 2009 and 1995.
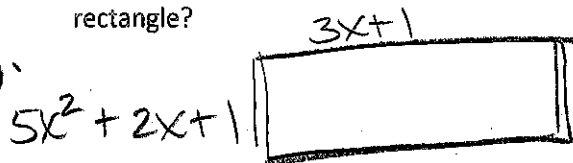
Sub.

substitute ⟶ $2009 - 1995$

$-18t^2 + 800 - (-10t^2 + 1600)$

$-18t^2 + 800 + 10t^2 - 1600$

$\boxed{-8t^2 - 800}$

5. If the length of a rectangle in terms of x is $5x^2 + 2x + 1$, and its width is $3x + 1$, what is the perimeter of this rectangle?

ADD.

$3x + 1$

$5x^2 + 2x + 1$

$2(3x + 1) + 2(5x^2 + 2x + 1)$

$6x + 2 + 10x^2 + 4x + 2$

$\boxed{10x^2 + 10x + 4}$

6. Bob mowed $2x^2 + 5x - 3$ yards on Monday, $4x - 7$ yards on Tuesday, and $3x^2 + 10$ yards on Wednesday. How many yards did he mow in the three days? combine

ADD.

$2x^2 + 5x - 3 + 4x - 7 + 3x^2 + 10 = \boxed{5x^2 + 9x}$

7. Molly has $4x + 10$ dollars and Ron has $-5x + 20$ dollars.

  a. How much money do they have altogether?

ADD $(4x + 10) + (-5x + 20) = \boxed{-x + 30}$

  b. How much more money does Molly have than Ron?

ADD & SUB.

Molly − Ron

$4x + 10 - (-5x + 20)$ ⟹ $4x + 10 + 5x - 20$

$\boxed{9x - 10}$