Name: Date: Period:

Evaluate the following expressions by using substitution.

Evaluate for a = 12, b = 5, c = 13.	Evaluate for a = 7, b = 24, c = 25	Evaluate for a = 3, b = 4, c = 5
1. $a^2 + b^2$ **$(12)^2 + (5)^2 = 144 + 25 = 169$**	3. $a^2 + b^2$	5. $a^2 + b^2$
2. $c^2 - b^2$	4. $c^2 - a^2$	6. $c^2 - b^2$

Solve the following equations for x and explain WHY you performed the operation you did to solve the equation.

		WHY?			WHY?		WHY?
1.	$x + 7 = 43$ **-7 -7** **x = 36**	I subtracted because it is the **OPPOSITE** of addition.	3.	$x - 12 = 18$		5.	$4x - 24 = 48$
2.	$64 + x = 164$		4.	$2x + 10 = 60$ **-10 -10** **2x = 50** **2 2** **x = 25**	First, I subtracted because it is the **OPPOSITE** of addition, then I divided because it is the **OPPOSITE** of multiplication	6.	$3x - 36 = 24$

Refresher…List the perfect squares in order from 1 – 400 (the parenthesis remind you how to find the perfect square). Some have been filled in for you.

Perfect Square	Perfect Square	Perfect Square	Perfect Square
1 (1 x 1)	**36** (6 x 6)	**121** (11 x 11)	
4 (2 x 2)			
			361 (19 x 19)
	100 (10 x 10)	**225** (15 x 15)	**400** (20 x 20)

Note: This is a helpful list, but not a complete list. There is an infinite # of perfect squares because any # can be multiplied by itself to get a perfect square.

Solve the following equations for x. Remember, the opposite of squaring a # is taking the square root.
(taking the square root should ALWAYS be your FINAL step to finding x)

1. $x^2 + 7 = 43$
   -7 -7
   $x^2 = 36$
   $x = \sqrt{36}$
   $x = 6$
2. $64 + x^2 = 164$
3. $x^2 + 21 = 30$
4. $66 + 55 = x^2$
5. $23 + x^2 = 192$
6. $x^2 = 57 + 87$