Name:_____ Date:_____

Math 9 HW Section 4.1 Writing Equations to Describe Patterns:

1. Given each sentence, write an equation that best describes the relationship between the two variables:

a) The sum of two numbers is 25	B)The difference of two numbers is 10	c)The product of three numbers is 30
d)The quotient of two numbers is 5	e)"Y" is equal two times "x" plus four	f) "Cost" is equal to $10 per person plus $250

2. Given each of the following table of values, find an equation that best describes the two variables:

a)

x	y
1	4
2	7
3	10
5	16

b)

x	y
1	–5
2	–1
3	3
4	7

c)

x	y
2	7
4	13
6	19
8	25

d)

x	y
6	1
10	–3
7	0
3	4

e)

x	y
5	10
9	18
1	2
4	8

f)

x	y
5	14
9	26
1	2
4	11

d)

x	y
4	6
6	4
9	1
3	7

e)

x	y
5	1
7	6
9	11
11	16

f)

x	y
12	1
6	2
4	3
2	6

3. Given each equation, complete the following table of values

a) $x + y = 5$

x	0	1	3	5
y				

b) $y = 2x - 1$

x	0		2	4
y		0		

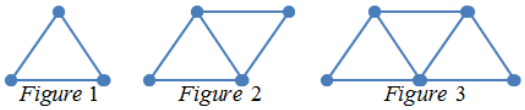
c) $y = 3x - 1$

x	0	2	4	
y				0

d) $y = \frac{3+x}{2}$

x	0	2	4	6
y				

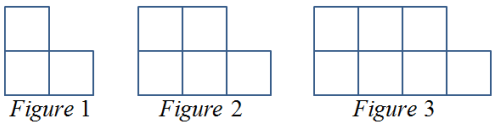
4. Given the figures below, derive a formula for the Number of sticks used (S) vs the Number of Triangles (T)



b) How many sticks will be needed for 85 triangles?

c) If we continue the pattern, how many triangles can be created with 121 toothpicks?

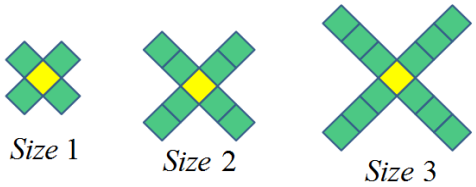
5. Given the figures below, derive a formula for the number of small little squares (S) vs the figure number (N)



b) How many squares little squares will there be in the figure 100?

c) If we continue the pattern, which figure will have 121 little squares?

6. Given the following figures, derive a formula for the number of little squares (S) vs the figure number (N)



b) Which figure will have 325 little boxes?