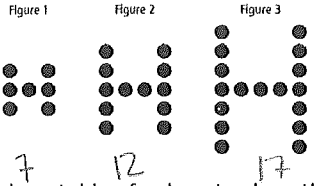
Math 9 Name:

Chapter Six – Review Assignment

1) Please look at the following pattern and answer the questions below:



a) Make a table of values to show the number of circles in relation to the figure number

f	1	2	3
C	7	12	17

b) Describe the relationship between the number of circles and the figure number

5 circles are added each time.

c) Develop an equation that can be used to determine the number of circles in each figure

$C = 5f + 2$

d) How many circles are in Figure 15?

$C = 5(15) + 2$ $C = 77$

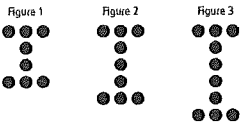
$= 75 + 2$

e) Which figure number has 57 circles?

$57 = 5f + 2$ $11 = f$

$55 = 5f$

2) Please look at the following pattern and answer the questions below:



a) Make a table of values to show the number of circles in relation to the figure number

f	1	2	3
C	8	9	10

b) Describe the relationship between the number of circles and the figure number

When the figure number increases by 1, there is one more circle.

c) Develop an equation that can be used to determine the number of circles in each figure

$C = f + 7$

d) How many circles are in Figure 15?

$C = 15 + 7$

$= 22$

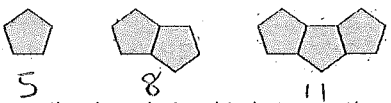
e) Which figure number has 57 circles?

$57 = C + 7$

$50 = C$

3) Please look at the following pattern and answer the questions below:

Table 1 Table 2 Table 3



5 8 11

a) Describe the relationship between the number of regular pentagons and the number of sides in this pattern (remember, when two pentagons are connected, you are only counting the perimeter of each figure = two sides touching each other do not count)

When another pentagon is added, there are 3 more sides

b) Make a table of values showing the number of sides for each figure in relation to the number of pentagons

f	1	2	3
s	5	8	11

c) Write an equation to model the number of sides of each shape

$S = 3f + 2$

d) How many sides would a shape made up of 21 pentagons have?

$S = 3(21) + 2$ $\quad S = 65$

$= 63 + 2$

e) How many pentagons are needed to make a figure with 29 sides?

$29 = 3f + 2$

$27 = 3f$

$9 = f$

4) Please look at the following number patterns and answer the questions below:

5, 3, 1, -1, -3

a) Make a table of values for the first five terms

n	1	2	3	4	5
t	5	3	1	-1	-3

b) Develop an equation that can be used to determine the value of each term in the number pattern

$t = -2n + 7$

c) What is the value of the 101st term?

$t = -2(101) + 7$ $\quad t = -195$

$= -202 + 7$

d) Which term has a value of 7?

$7 = -2n + 7$ $\quad \frac{0}{-2} = \frac{-2n}{-2}$

$-7 \quad -7$ $\quad 0 = n$

5) Please look at the following number patterns and answer the questions below:

10, 17, 24, 31, 38

a) Make a table of values for the first five terms

n	1	2	3	4	5
t	10	17	24	31	38

b) Develop an equation that can be used to determine the value of each term in the number pattern

$t = 7n + 3$

c) What is the value of the 23rd term?

$t = 7(23) + 3$

$= 161 + 3$

$= 164$

d) Which term has a value of -18?

$-18 = 7n + 3$

$-3 \quad -3$

$\frac{-21}{7} = \frac{7n}{7}$

$-3 = n$

6) What linear equation models the relationship between the numbers in each table?

a)

x	y
1	-2
2	1
3	4
4	7
5	10

$y = 3x - 5$

b)

x	y
0	8
1	9
2	10
3	11
4	12

$y = x + 8$

c)

x	y
1	2
2	-3
3	-8
4	-13
5	-18

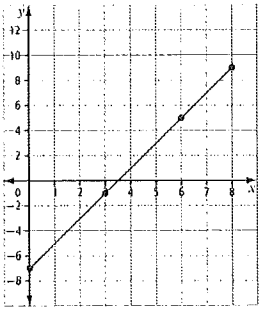
$y = -5x + 7$

d)

x	y
1	-7
2	-11
3	-15
4	-19
5	-23

$y = -4x - 3$

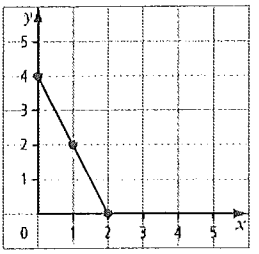
7) Which linear equation is represented by the following graph?



x	y
0	-7
1	-5
2	-3
3	-1

$y = 2x - 7$

8) Which linear equation is represented by the following graph?



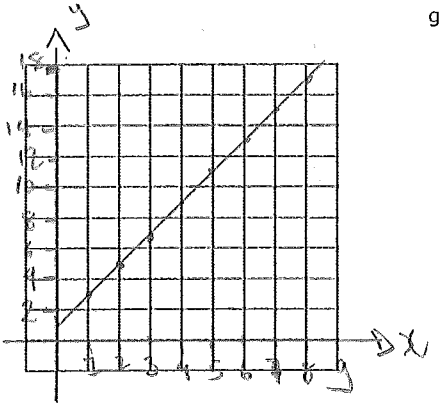
x	y
0	4
1	2
2	0

$y = -2x + 4$

9) Use the following table to answer the questions below

x	y
1	3
2	5
3	7
4	9
5	11

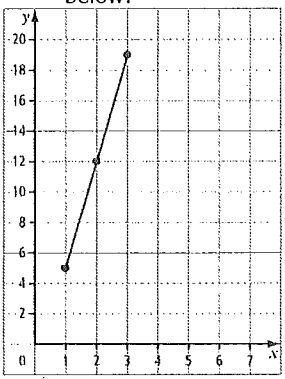
a) Plot the data on the grid paper below



b) What is the linear equation is represented by the data in this graph

$y = 2x + 1$

10) Please look at the following graph and answer the questions below:



a) Create the table of values that represents the graph above

x	1	2	3
y	5	12	19

b) What linear equation is represented by the data in this graph

$y = 7x - 2$

11) Solve the following problems:

Solve for s if

a) $s = 2n - 2$ and $n = 5$

$s = 2(5) - 2$
$= 10 - 2$
$= 8$

b) $s = -5n + 18$ and $n = -2$

$s = -5(-2) + 18$
$= 10 + 18$
$= 28$

c) $s = 17 - 3n$ and $n = -4$

$s = 17 - 3(-4)$
$s = 17 + 12$
$= 29$

d) $s = 4.5 + 3.7n$ and $n = 2.5$

$s = 4.5 + 3.7(2.5)$
$= 4.5 + 9.25$
$= 13.75$

Solve for *n*

a) $3 = 3n - 12$

$+12 \quad +12$

$\frac{15}{3} = \frac{3n}{3}$

$5 = n$

b) $-43 = 15n - 88$

$+88 \quad +88$

$\frac{45}{15} = \frac{15n}{15}$

$3 = n$

c) $47 + 13.5n = 114.5$

$-47 \quad -47$

$\frac{13.5n}{13.5} = \frac{67.5}{13.5}$

$n = 5$

d) $8.7n + 11 = 37.1$

$-11 \quad -11$

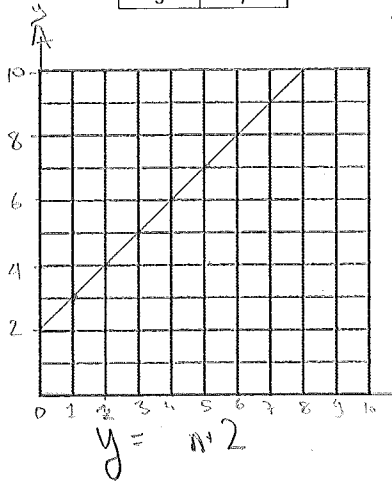
$\frac{8.7n}{8.7} = \frac{26.1}{8.7}$

$n = 3$

12) Create a graph and a linear equation to represent each table of values:

a)

x	y
1	3
2	4
3	5
4	6
5	7



$y = n + 2$

b)

x	y
1.5	-0.25
2.5	0.25
3.5	0.75
4.5	1.25
5.5	1.75

$+1 \quad +1 \quad +1 \quad +1 \quad +1$

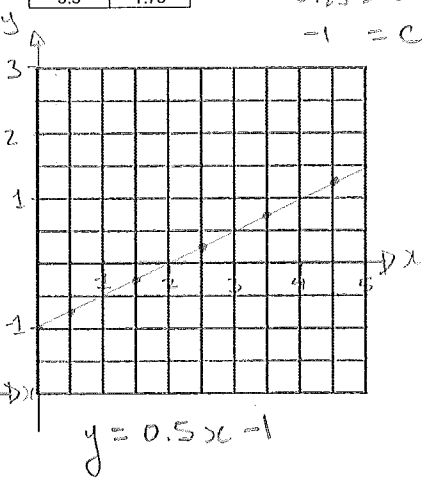
$+0.5 \quad +0.5 \quad +0.5 \quad +0.5$

$y = 0.5x + c$

$-0.25 = 0.5(1.5) + c$

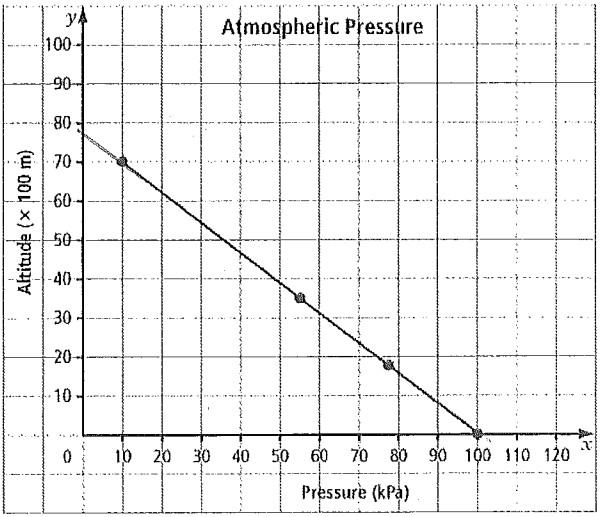
$-0.25 = 0.75$

$-1 = c$



$y = 0.5x - 1$

Assume that this graph shows air pressure at different altitudes. Use the graph to answer the following question(s).



According to the graph, the approximate altitude where the air pressure is 5 kPa is 7400 m.

According to the graph, the approximate air pressure at an altitude of 2000 m is 75kPa.