Math 6 Practice

Chapter 1 – Patterns and Equations Quiz

Name: Answer key

Score: _____

Question 1:

Fill out the following tables if the rule is to…

a) Multiply by 6

Input	Output
1 x6	6
2 x6	12
3 x6	18
4 x6	24
5 x6	30

b) Multiply by 3 then add 3

Input	Output
1 x3-3	0
2 x3-3	3
3	6
4	9
5	12

Question 2:

Using words, what is the pattern rule for each of the following tables?

a)

Input	Output
4	25
5	32
6	39
7	46

Start at 4, then multiply by 7, then subtract 3

b)

Input	Output
50	20
55	22
60	24
65	26

Start at 50, then divide by 5, then multiply by 10

Question 3:

Complete the input/output chart using the following rule:

$3n+5$

Input 'n'	Output
1	
2	
3	
4	
5	

a) Using words, what does $3n+5$ mean you have to do?

Multiply input by 3, then add 5

b) What is the output when n = 18?

Output = 59

18
× 3
54

$3 \times 18 + 5$

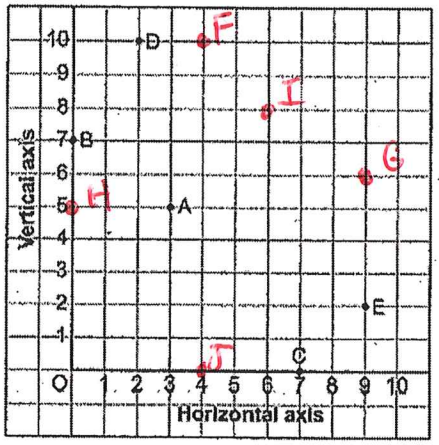
$= 54 + 5$

$= 59$

~~59~~

Question 4:

Draw (plot) in the following points.



F (4,10), H (0,5), J (4,0),

G (9,6), I (6,8)

Question 5:

Using the drawings, complete the table and graph the pattern.

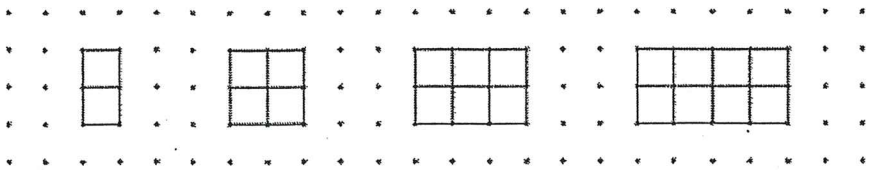
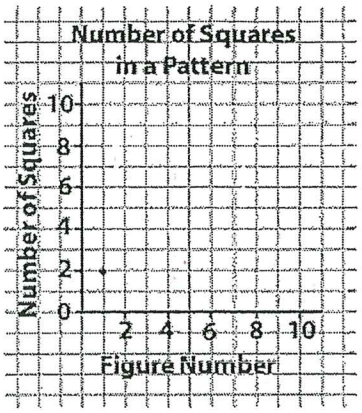


Figure 1 Figure 2 Figure 3 Figure 4

a) Complete the table.

Figure Number	Number of Squares	Ordered Pair
1	2	(1, 2)
2	4	(2, 4)
3	6	(3, 6)
4	8	(4, 8)

b) Graph the pattern



Question 6:

Write an expression with any variable to represent each pattern rule. Use "**g**" as your input variable.

a) Five more than a number — $g+5$

b) Three times a number — $3g$

c) Multiply the input by 10, then add 4. — $10g+4$

d) Divide the input by 3, then add 4. — $\frac{g}{3}+4$

e) Multiply the input by 7, then subtract 2. — $7g-2$

EXTENSION: Question 7:

Using algebra, solve for the unknown variables. Show your work.

a) $C - 8 = 18$

$C = 18 + 8$

$C = 26$

b) $2K - 7 = 21$

$2K = 21 + 7$

$2K = 28$

$K = 14$

c) $22 = 12 + X$

$22 - 12 = X$

$10 = X$

$X = 10$

d) $42 + 25 = 4Q - 13$

$42 + 25 + 13 = 4Q$

$80 = 4Q$

$20 = Q$

$Q = 20$

$42 + 25 = 67$

$67 + 13 = 80$

c) Using the variable 'n', rewrite the pattern rule.

d) What is the output when n = 18?

'n'	
1	
2	
3	
4	
5	

Question 3:

Write an expression with any variable to represent each pattern rule. Use '**g**' as your input variable.

f) Five more than a number

g) Three times a number