Math 7 Practice

Name: Answer Key

Chapter 1 – Patterns and Equations Quiz

Score: _____

Question 1:

Using the correct order of operation, solve the following questions.

a) $(4-2)\times 3$

$= 6 \times 3$

$= 18$

b) $54 - 3 \times 6$

$54 - 18$

$= 36$

$\begin{array}{r} 4\ 14 \\ 5\not{4} \\ -\ 18 \\ \hline 3\ 6 \end{array}$

Question 2:

Complete the input/output chart using the following rule: $3n+5$

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

Multiply 'n' by 3, then add 5

b) What is the output when n = 18?

59

$3 \times 18 + 5$

$= 54 + 5 = 59$

$\begin{array}{r} 18 \\ \times\ 3 \\ \hline 54 \end{array}$

Input 'n'	Output
1	8
2	11
3	14
4	17
5	20

Question 3:

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. — $10g+4$

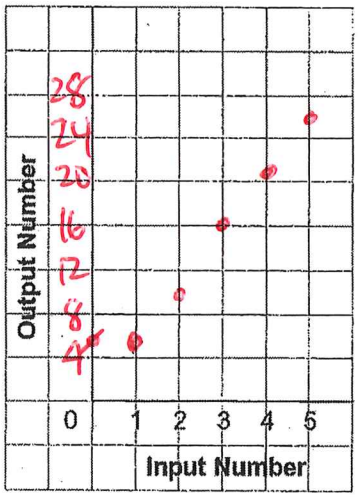
d) Divide the input by 3, then add 4. — $\frac{g}{3}+4$

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

Question 4:

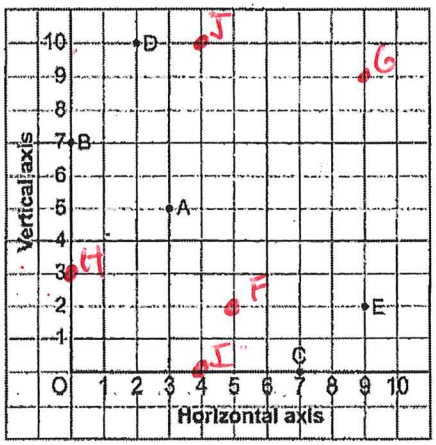
Fill out the input/output chart. Then represent it on the graph below.

Input n	Output $5n+1$
1	6
2	11
3	16
4	21
5	26



Question 5:

Plot (draw) the following points



F (5, 2), H (0, 3), J (4, 10),

G (9, 9), I (4, 0)

Question 6:

Write a formula (pattern rule) using the variable "**y**" and find the 12th term in the sequence.

a) 6, 12, 18, 24 :

1 2 3 4

Pattern Rule: y x 6 = 6y

12th Term: 72 (6 x 12 = 72)

b) 10, 11, 12, 13 :

1 2 3 4

Pattern Rule: y + 9

12th Term: 21 (12 + 9 = 21)

Question 7:

Complete the following tables using the provided output rule.

a)

Input b	Output $12-b$
1	11
2	10
3	9
4	8
5	7

b)

Input f	Output $2f+3$
1	5
2	7
3	9
4	11
5	13

c)

Input h	Output $5h+6$
1	11
2	16
3	21
4	26
5	31

Question 9:

Using data from the following tables, write the pattern rule. Then, write the 10th, 25th, and 66th term.

a)

Input r	Output
1	4
2	6
3	8
4	10
5	12
10	22
25	52
66	134

2x10+2
2x25+2
2x66+2
66
x 2
132+2

Pattern Rule: 2r+2

b)

Input n	Output
1	9
2	14
3	19
4	24
5	29
10	54
25	129
66	334

3
66
+5
330

Pattern Rule: 5n+4

EXTENSION: Question 10:

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