

Parent Signature: _____

Name: _____

Grade 5 Math – Patterning and Algebra

Date: _____

Unit 1, Unit Test

Expectations:

◆ determine, through investigation using a table of values, relationships in growing and shrinking patterns, and investigate repeating patterns involving translations;

Number Patterns

Knowledge and Understanding	Application	Thinking	Communication

Knowledge and Understanding:

1. Write the first 5 terms in each pattern.

/3 a) Start at 5. Add 11 each time.

_____, _____, _____, _____, _____, ...

b) Start at 4. Add 7 each time.

_____, _____, _____, _____, _____, ...

c) Start at 15. Add 6 each time.

_____, _____, _____, _____, _____, ...

Choose the correct answer for the following questions.

2. Sandra is organizing hockey teams for a Girl's Hockey League. She decides that each team needs 14 players and 3 coaches per team. She uses this table to help her.

/3

Number of teams	Number of coaches	Number of players
1	3	14
2	6	28
3		
4		

i) How many coaches will Sandra need for 5 teams?

a. 10 b. 24 c. 18 d. 15

ii) How many teams will Sandra have if 126 girls register to play hockey?

a. 8 b. 6 c. 7 d. 9

iii) What number of players does Sandra need for 5 teams?

/6

a. 65 b. 70 c. 60 d. 15

Application

3. Write the pattern rule for each pattern and find the next 4 terms in each pattern.

/8

a) 5, 8, 12, 15, 19, _____, _____. _____, _____.

Rule: _____

b) 50, 48, 47, 45, 44, _____, _____. _____, _____.

Rule: _____

c) 10, 12, 16, 22, 30, _____, _____. _____, _____.

Rule: _____

d) 7, 9, 11, 7, 9, 11, _____, _____. _____, _____.

Rule: _____

4. This table shows the Input/Output from a machine. Complete the table.

/4

Input	Output
44	22
40	20
36	18
32	16

a) Identify the operation in the machine: _____

b) Write the pattern rule for the input numbers:

c) Write the pattern rule for the output numbers:

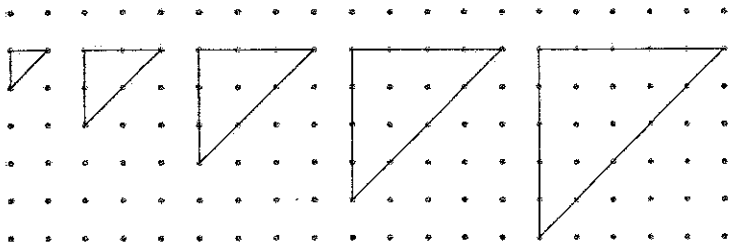
Thinking:

5. Parkview has a plant sale to raise money for a local charity. Each plant costs \$10. Make a table to show how much money is collected when these number of plants are sold: 10, 20, 30, 40, 50. How many plants have to be sold to collect \$500?

/3

Number of Plants	Money Raised

6. Here is a pattern of similar triangles drawn on dot paper. Find the number of dots on the perimeter of the 10th triangle. Use a table to find the pattern. Write the pattern rule.



/4

7. Dave read 70 pages on Monday, 67 pages on Tuesday, and 64 pages on Wednesday. This pattern continued until Dave finished his book.

a) Make a table to show how many pages were read each day.

b) What was the total number of pages Dave read the first 7 days?

/4

c) Dave finished his book on the day he read 31 pages. How many pages are in the book?

/11

Communication:

7. The table shows the output numbers from an Input/Output machine. What might the input numbers be?

13 What would the operation in the input/output machine be?

Input	Output
	5
	6
	7
	8
	9
	10

Our Problem Solving Rubric:

Learning Goal: We are learning to effectively and clearly communicate our solution when solving problems in math.

My Success Checklist	Level 1	Level 2	Level 3	Level 4
I can show all my thinking and steps	I have shown little or none of my thinking and steps.	I have shown some of my thinking and steps.	I have shown a lot of my thinking and steps.	I have shown most or all of my thinking and steps.
I can use appropriate math vocabulary	I have used a little or no appropriate math vocabulary.	I have used some appropriate math vocabulary.	I have used a lot of math vocabulary.	I have used most or all appropriate math vocabulary.
I can explain how I know my answer is correct	I do not explain how I know my answer is correct	I try to explain how I know my answer is correct	I can clearly explain how I know my answer is correct	I can clearly explain with a lot of detail how I know my answer is correct
I can provide a clear concluding answer sentence	I do not provide a concluding answer sentence	I provide a simple concluding answer sentence	I provide a clear concluding answer sentence	I provide a clear and well thought out concluding answer sentence.