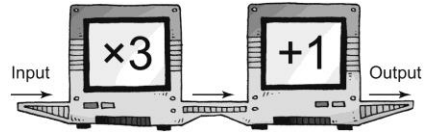


Master 1.19a

**Unit Test: Unit 1
Patterns and Equations**

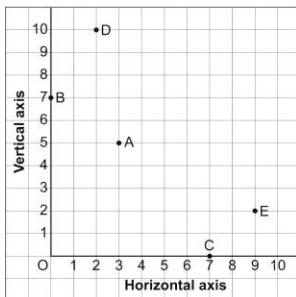
Part A

1. a) Here is an Input/Output table for this machine. Check the data in the table. Identify any output numbers that are incorrect. How do you know they are incorrect?



Input	Output
1	4
2	7
3	8
4	12
5	16
6	13

- b) Write the pattern rule for the input: _____
- c) Write the pattern rule for the corrected output: _____
2. Write an expression with a variable to represent each pattern rule. Let n represent the input.
- a) Multiply the input by 10, then add 4. _____
- b) Divide the input by 3, then add 4. _____
- c) Multiply the input by 7, then subtract 2. _____
3. Write the coordinates of each point on the coordinate grid.



A: _____, B: _____, C: _____,
D: _____, E: _____

4. Write an expression with 2 numbers and one operation to balance each equation.
- a) $5 \times 7 =$ _____ b) $18 - 9 =$ _____ c) $32 \div 8 =$ _____

Master 1.19b

Unit Test continued

Part B

5. This table shows the input and output from a machine with two operations.

- a) Identify the numbers and operations in the machine.
Draw the machine.

Input	Output
1	2
2	7
3	12
4	17

- b) Write a pattern rule that relates the input to the output.

- c) Write an expression to represent the pattern.

- d) Find the output when the input is 10. _____

What strategy did you use? _____

6. Rewrite each expression using a commutative property.

- a) 4×8 _____ b) $84 + 19$ _____

7. a) Write an equivalent form of the equation $5c = 30$. _____

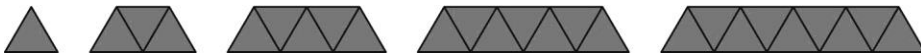
- b) Tell how you know that equality has been preserved.

Master 1.19c

Unit Test continued

Part C

8. a) Record this pattern in the table.



b) Use grid paper. Draw a graph to represent the pattern. Explain how the graph represents the pattern.

c) Write an expression to represent the pattern. _____

9. June is going to the amusement park with her friends. She will pay \$8 for admission, plus \$2 for each ride she goes on.

a) Make a table to show how much June will pay if she goes on 1, 2, 3, and 4 rides.

b) Write a pattern rule that relates the amount June pays to the number of rides she goes on.

c) Write an expression to represent the pattern. _____

d) Suppose June goes on 8 rides. How much will she pay? _____

What strategy did you use to find out?

e) Suppose June paid \$30. How many rides did she go on? _____

How did you find out? _____