Name _____ Date _____
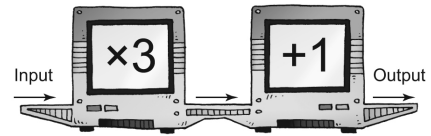
Master 1.19a
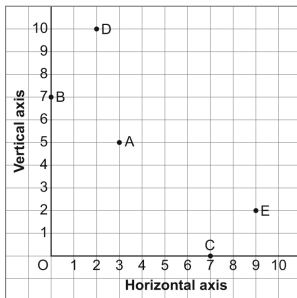
Unit Test: Unit 1
Patterns and Equations

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 → ×3 → +1 → Output

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)** $32 \div 8 =$ _____

The right to reproduce or modify this page is restricted to purchasing schools. **61**
This page may have been modified from its original. Copyright © 2009 Pearson Education Canada

(**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? _____