4.3a Homework: Writing Equations from Patterns

1. Complete the table below. Write an equation relating the output (y value) to the input (x value). Then answer the questions.

Hours (x)	1	2	3	4	5	6	7	Equation:
Miles Driven (y)	25	50	75	100	125			$y =$

a. Is the relationship in the table proportional? Explain your answer.

b. What connections do you see between the unit rate, the table, and the equation?

c. This equation gives you a rule when you input a number of hours (x) to get an output of miles (y). Write the equation that does the opposite job: you input a miles (y) and get an output of hours (x).

d. What is the mathematical relationship between the constant of proportionality in the two equations?

2. Complete the table below. Write an equation relating the output (y value) to the input (x value). Then answer the questions.

Feet (x)	Yards (y)
1	1/3
2	2/3
3	1
4	1 1/3
5	1 2/3
6	
10	

Equation:
$y =$

a. Is the relationship in the table proportional? Explain your answer.

b. What connections do you see between the unit rate, the table, and the equation?

c. This equation gives you a rule when you input a number of feet (x) to get an output of number of yards (y). Write the equation that does the opposite job: you input a number of yards (y) and get an output of number of feet (x).

d. What is the mathematical relationship between the constant of proportionality in the two equations?

4.3b Classwork: Writing Equations from Graphs

1. Use Graph A below to fill in the table relating calories to snacks.

Number of Snacks	Calories	Ordered Pair	Write a complete sentence describing the meaning of this point on the graph.
0	0	(0, 0)	Zero snacks have zero calories.
1			
2			
3			
4			

a. Is this a proportional graph? Why or why not?

b. What is the unit rate (include labels)? How do you know?

c. Write the equation for calories related to number of snacks.

d. Where does the unit rate show up on the graph? In the equation?
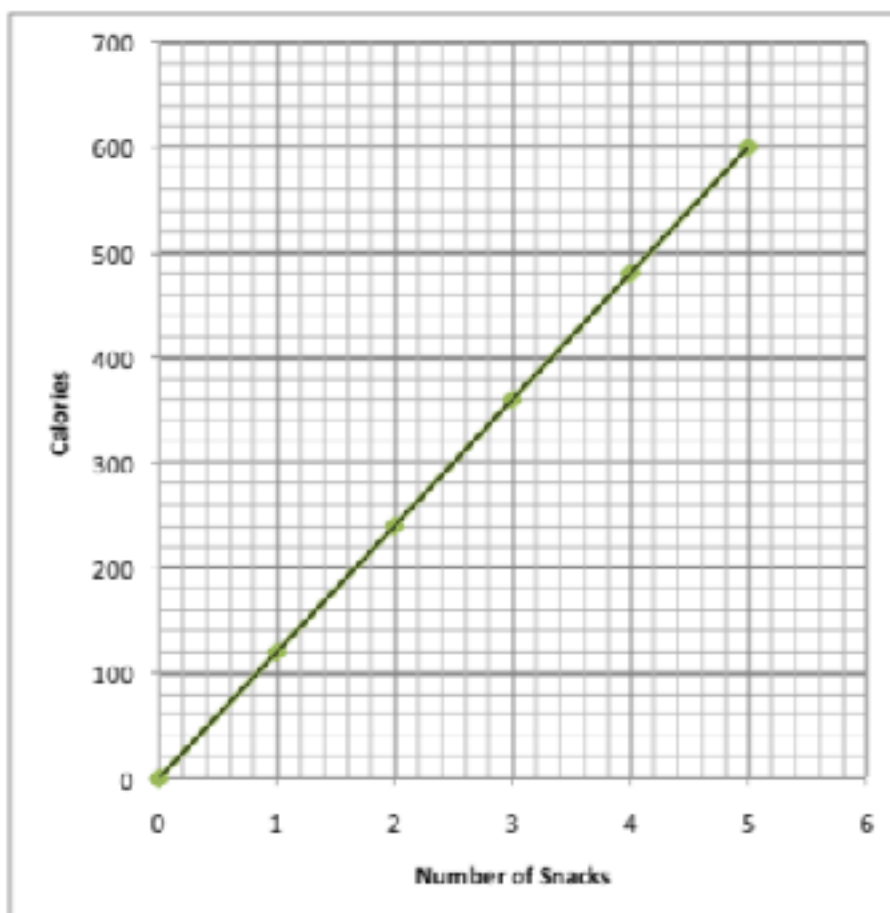
Graph A

2. Use Graph B to fill in the table relating cost to cab-ride distance.

| Miles	Cost	Ordered Pair	Write a complete sentence describing the meaning of this point on the graph.

Graph B

a. Is this a proportional graph? Why or why not?

b. Looking at the graph, describe what's happening to the cost as miles increase.

c. Is there a unit rate? If so, what is the unit rate? Is the rate consistent for the entire graph? Explain.

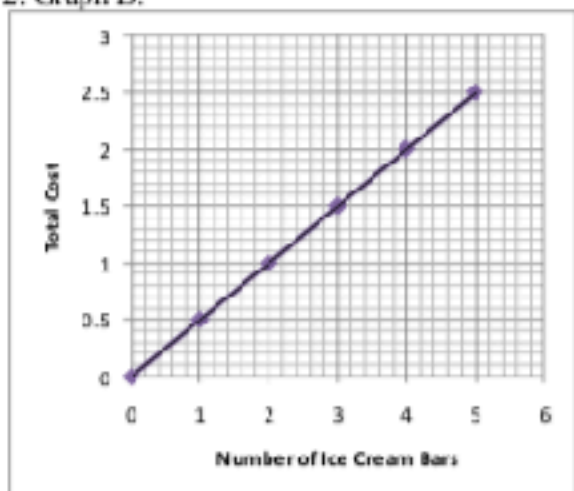d. Challenge: Write the equation relating cost to cab-ride distance. Explain the equation in words.
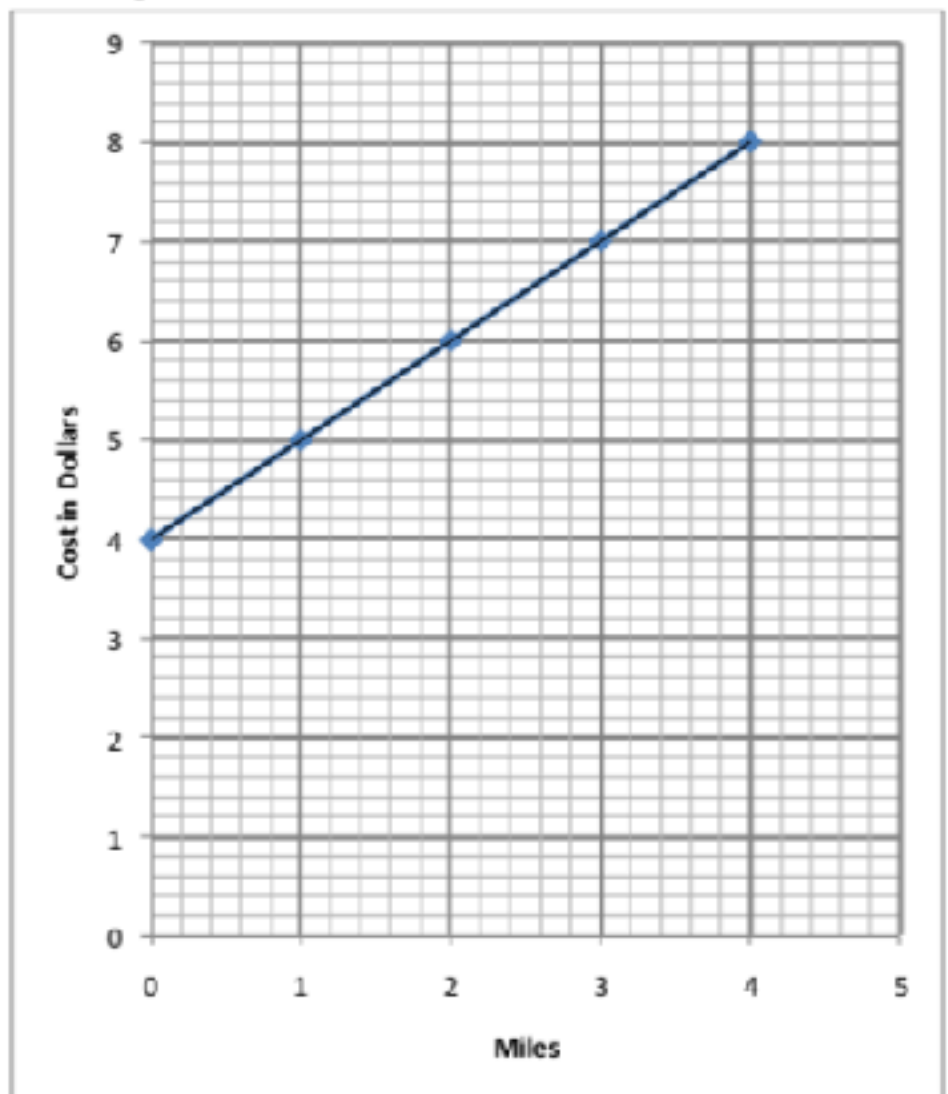
4.3b Homework: Writing Equations from Graphs

1. Graph C:
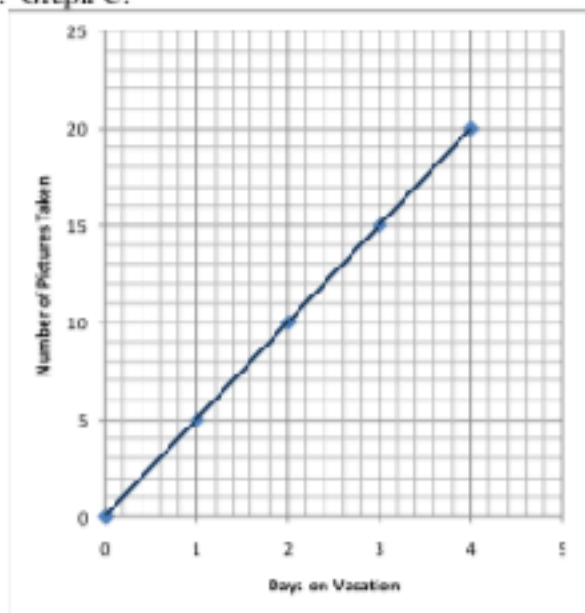
a. Is this a proportional graph? Why or why not?

b. Fill in the table above for the graph

c. What is the unit rate (include labels)?

d. Write the equation relating number of pictures taken to days on vacation.

2. Graph D:

a. Is this a proportional graph? Why or why not?

b. Fill in the table for the graph

c. What is the unit rate (include labels)?

d. Write the equation relating cost to number of ice cream bars purchased.