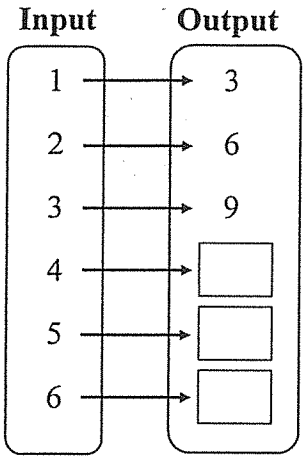
name _____ Date _____

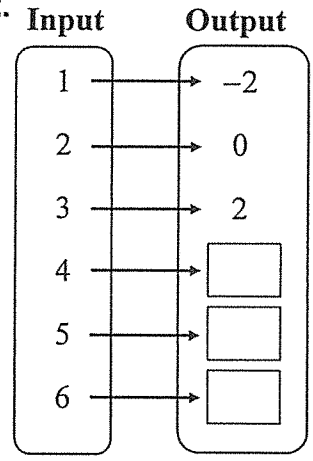
6.1 Classwork

Describe the pattern in the mapping diagram. Complete the diagram.

1.



2.



Draw a mapping diagram of the set of ordered pairs.

3. $(1, 2), (3, 5), (6, 9), (10, 12)$

4. The table shows the number of tickets purchased and the total cost.

Tickets	Total Cost
1	$14
2	$24
3	$30
4	$32

a. Use the table to draw a mapping diagram.

b. Is the relation a function? Explain.

c. Describe the pattern. How does the cost per ticket change as you buy more tickets?

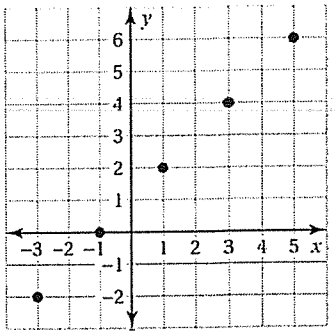
d. Based on this pattern, how much would you expect to pay for 5 tickets?

e. Compare the costs for 3 tickets and 5 tickets. What can you suggest?

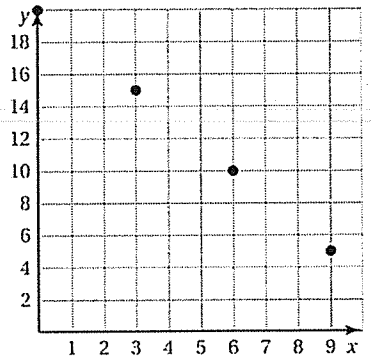
f. Explain why this pattern could not continue for up to 8 tickets.

Draw a mapping diagram for the graph. Then describe the pattern of inputs and outputs.

5.



6.



7. The table shows the cost of a collect call.

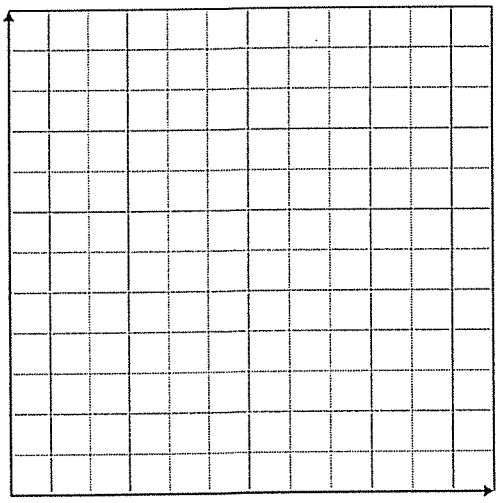
Minutes	1	2	3	4	5	6	7
Cost	$3	$3.25	$3.50	?	?	?	?

a. Complete the table.

b. Draw a mapping diagram for the table.

c. Is the relation a function? Explain.

e. Graph the ordered pairs in a coordinate plane.

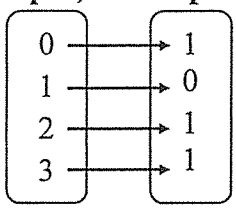


f. Describe the pattern. How does the cost change as the number of minutes increases?

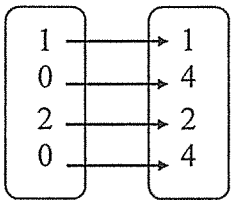
6.2 Classwork

Write an equation that describes the function.

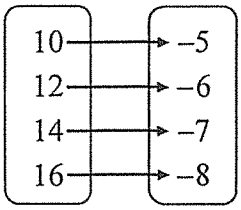
1. Input, x Output, y



2. Input, x Output, y



3. Input, x Output, y



Write a function rule for the statement.

4. The output is eight less than the input.

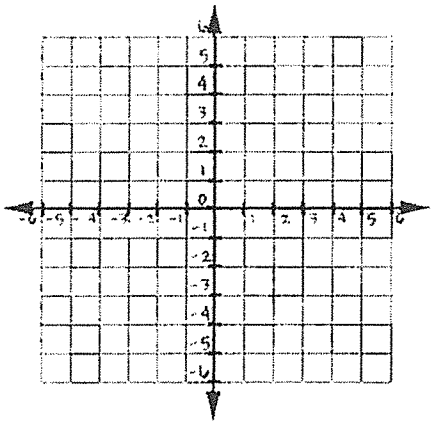
5. The output is five times the input.

6. The output is two less than the input

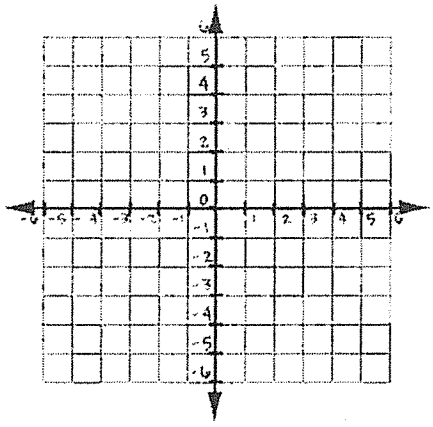
7. The output is double the input.

Graph the function.

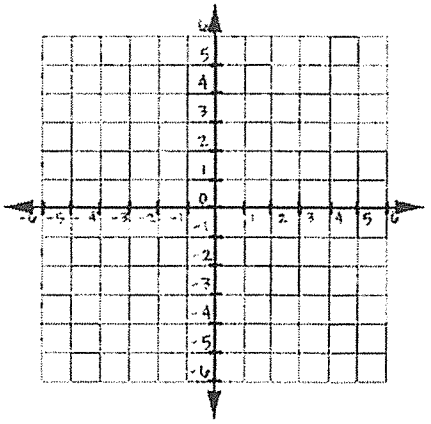
8. $y = x + 5$



9. $y = 2x + 3$



10. $y = \frac{x}{2} - 4$



11. You are running at a rate of 6 miles per hour. **a.** Write a function that represents the distance d traveled in h hours.

b. How many miles do you run in 2 hours?

12. The cost of admission for a student is $4 less than the cost of admission for an adult.

a. Write a function that relates the cost of admission for a student s with the cost of admission for an adult a.

b. What is the cost of admission for a student when the cost of admission for an adult is $7.50?

c. What is the cost of admission for an adult when the cost of admission for a student is $2?

9. You are traveling on a turnpike at a rate of 70 miles per hour. **a.** Write a function that represents the distance d traveled in h hours.

b. How many miles do you travel in 3.5 hours?

13. Your school club is selling popcorn at the football game. The cost of making the popcorn is $90. You charge $1.50 for each bag of popcorn. **a.** Write a function you can use to find the profit P for selling b bags of popcorn.

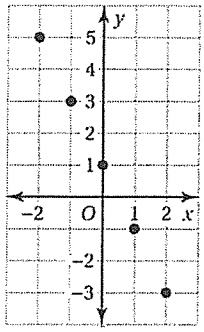
b. You will *break even* if the cost of making the popcorn equals your income. How many bags of popcorn must you sell to break even?

Name _____ date _____ per _____

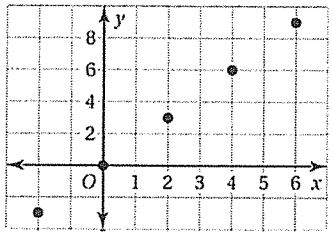
6.3 Practice AB

Use the graph or table to write a linear function that relates y to x.

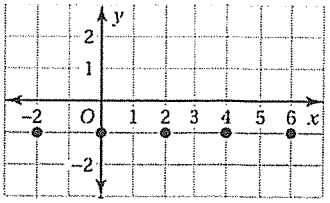
1.



2.



3.



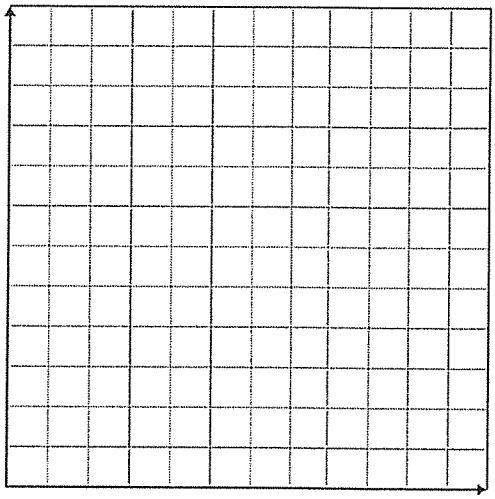
5. The table shows the cost y (in dollars) of x fluid ounces of brewed coffee.

Fluid Ounces, x	0	8	16	24
Cost, y	0	0.5	1	1.5

b. Write a linear function that relates y to x.

Interpret the slope.

c. Graph the linear function.



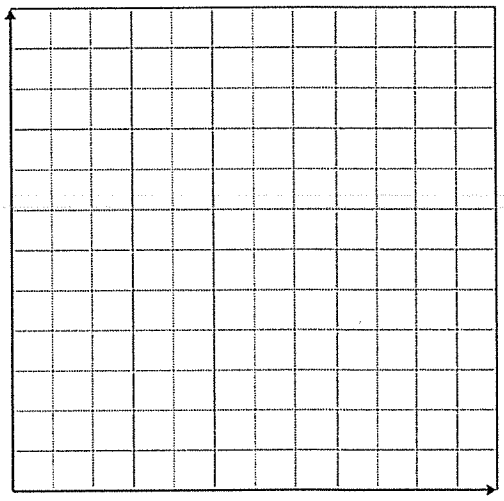
d. How much does it cost to purchase 32 fluid ounces of brewed coffee?

6. The table shows the area y (in square feet) of a triangle with a height of x feet.

b. Write a linear function that relates the area of the triangle to the height of the triangle.

Height, x	0	1	2	3
Area, y	0	3	6	9

c. Graph the linear function.



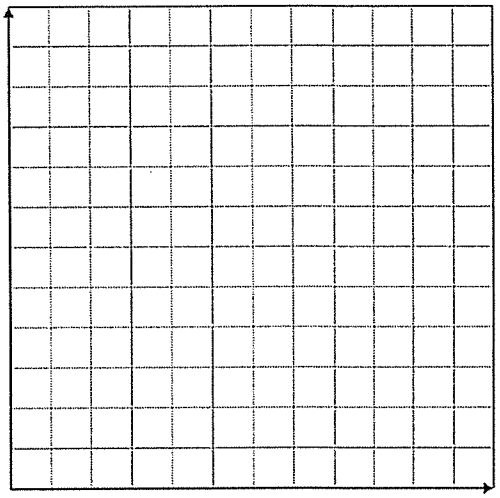
5. The table shows the time y (in minutes) it takes to make x burritos.

Burritos, x	1	2	3	4
Minutes, y	0.75	1.5	2.25	3

b. Write a linear function that relates y to x.

Interpret the slope.

c. Graph the linear function.



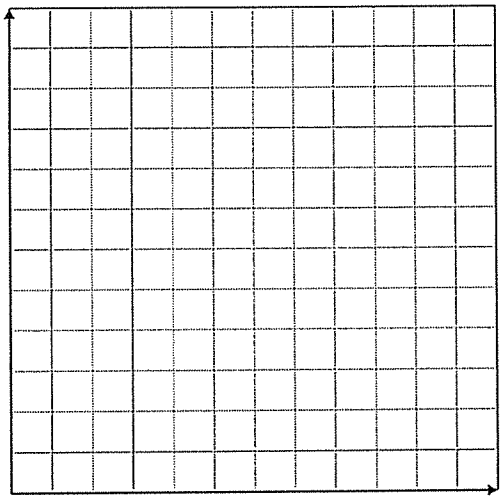
d. How long does it take to make 7 burritos?

6. The table shows the distance traveled y (in miles) in a car in x hours.

Hours, x	0	2	4	6
Miles, y	0	128	256	384

b. Write a linear function that relates distance traveled to hours.

c. Graph the linear function.



d. What was the distance traveled in 5 hours?

f. How long will it take to travel 400 miles?

x	−4	−2	0	2
y	8	4	0	−4

x	−5	0	5	10
y	1	3	5	7