EXAMPLE 4
SOLUTION
(CONTINUED)

Use the rate of change to work forwards from $x = -2$ to find the y-value paired with the x-coordinate of 0.

x	y	
−2	−9	
−1	−5	+4
0	−1	+4

The start value is −1.
The rate of change is +4.

EXERCISES

Determine the rate of change for each situation.

1. George collected 18 bugs in 9 days.
2. Over 6 days Theo spent $336.
3. Michiko took 760 steps during a 15 minute run.
4. Natalie spent $4.80 for 8 roses.

Determine the rate of change and start value for each table.

5.

x	y
0	5
1	9
2	13
3	17
4	21

6.

x	y
−2	12
−1	9
0	6
1	3
2	0

7.

x	y
0	−3
3	0
5	2
6	3
8	5

8.

x	y
−2	−4
1	2
3	6
5	10
8	16

9.

x	y
−1	1
2	−5
4	−9
6	−13
9	−19

10.

x	y
−4	2
−2	3
−1	3.5
2	5
6	7

Use the given rate of change and start value to complete each table.

11.

x	y
0	
1	
2	
3	
4	
5	

Rate of Change = +8
Start Value = 1

12.

x	y
−1	
	4.8
1	
2	
3	12.6
4	

Rate of Change = +2.6
Start Value = 4.8

13.

x	y
	18
−1	
0	
	3
3	
6	

Rate of Change = −5
Start Value = 8

14. Jim-Bob's Car Rental Company charges a set fee for renting a car and an additional amount per mile driven. Frank has rented from Jim-Bob's three times and his charges are shown in the table to the right.

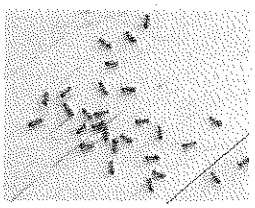
Miles Driven	Cost
4	$17.60
10	$20.00
22	$24.80

a. How much does Jim-Bob charge per mile driven?

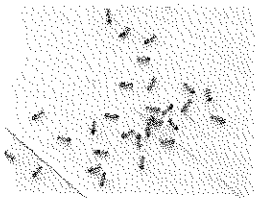
b. What is the set fee for renting a car at Jim-Bob's?

c. How much would a car rental cost if Frank drove 30 miles? Show all work necessary to justify your answer.

15. Mark moved into a new house and believes his bedroom will soon be taken over by ants. In the table shown below, Mark records the number of ants in his bedroom on different days since he moved in.



Days Since Mark Moved In	Number of Ants
3	66
5	90
9	138
13	186
15	210



a. How many ants are moving into Mark's bedroom each day?

b. How many ants were in his room when he first moved in?

c. If this pattern continues, how many ants will be in his room after 3 weeks? Use words and/or numbers to show how you determined your answer.

16. Mario rides his scooter to work each day. He is able to travel 0.5 miles per minute. He lives 4.7 miles from work.

Minutes Traveled	Distance to Work
0	4.7
1	
2	
3	

a. Copy the table and fill in Mario's distance to work based on the number of minutes traveled. Continue the table until he has arrived at work.

b. What is the rate of change in this situation?

c. How long (to the nearest second) will it take for Mario to get to work? Explain how you arrived at your answer.

REVIEW

Each input-output table represents a real-world situation. Determine an appropriate range for the *y*-axis. State what increments you would use on the *y*-axis.

17.

Hours	Distance Traveled
0	45
1	75
2	105
3	135
4	165
5	195

18.

Days	Plant Height
0	0
1	0.2
2	0.4
3	0.6
4	0.8
5	1.0

19.

Lawns Mowed	Profit
0	−$50
1	−$30
2	−$10
3	$10
4	$30
5	$50