LESSON 1.3

Exercise Set A

MM1A1d Investigate and explain the characteristics of a function: domain, range, zeros, intercepts, intervals of increase and decrease, maximum and minimum values, and end behavior.

Write the ordered pairs that can be formed from the table.

1.

Input	Output
0	3
1	5
2	7
3	9
4	11

2.

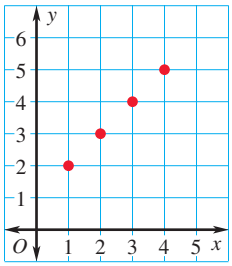
Input	Output
2	4
4	7
6	10
8	13
10	16

3.

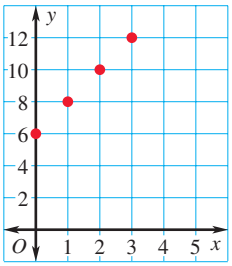
Input	Output
3	2
6	2
9	4
12	4
15	6

Identify the ordered pairs in the graph. Then identify the domain and range.

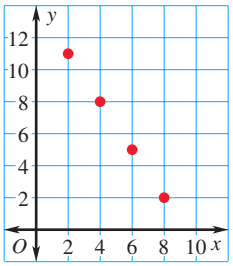
4.



5.



6.



Make an input-output table for the function.

7. $y = 3x + 2$

Domain: 0, 1, 2, 3

8. $y = 4x - 1$

Domain: 1, 2, 3, 4

Graph the ordered pairs.

9. (3, 4), (4, 7), (5, 10), (6, 13), (7, 16)

10. (2, 5), (6, 7), (4, 6), (12, 10), (10, 9)

Graph the function.

11. $y = 6 - x$

Domain: 6, 5, 4, 3, 2

12. $y = \frac{1}{3}x$

Domain: 6, 9, 12, 15, 18

13. $y = 4x - 3$

Domain: 1, 2, 3, 4, 5

14. $y = 1.2x$

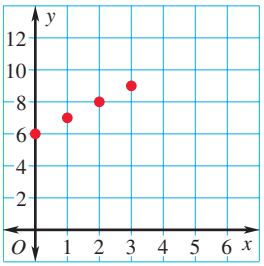
Domain: 1, 2, 3, 4, 5

UNIT 1

Exercise Set A *(continued)*

Write a rule for the function represented by the graph. Identify the domain and range of the function.

15.



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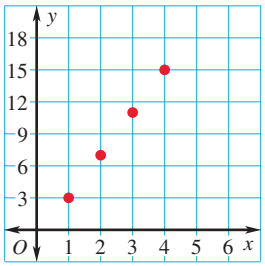

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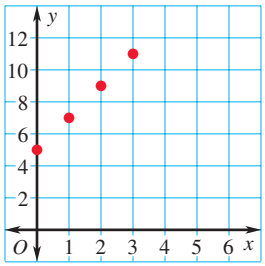

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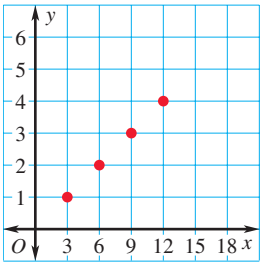

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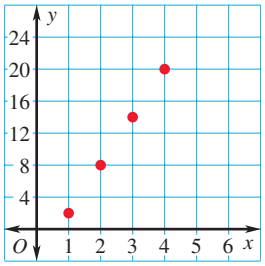

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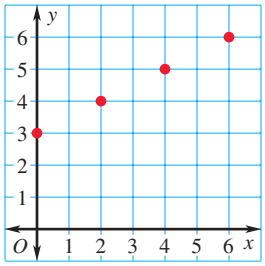


21. High Temperatures The table shows the high temperature H (in degrees Fahrenheit) in a city during the week as a function of the number of days d since Monday. Graph the function. *Describe* how the high temperatures change as the week progresses.

Number of days since Monday, *d*	0	1	2	3	4	5
High temperature (degrees Fahrenheit), *H*	24	34	41	39	37	39

22. Metal Screws The table shows the number of threads per inch on a screw as a function of screw size.

Screw size number, *x*	0	1	2	3	4	5	6
Number of threads per inch, *y*	80	72	64	56	48	44	40

a. Graph the function.

b. *Describe* how the number of threads per inch changes as the screw size increases.

c. Would it be reasonable to expect a #8 screw to have 32 threads per inch? *Explain*.

LESSON 1.3

Exercise Set B

MM1A1d Investigate and explain the characteristics of a function: domain, range, zeros, intercepts, intervals of increase and decrease, maximum and minimum values, and end behavior.

Write the ordered pairs that can be formed from the table.

1.

Input	Output
4	8
6	12
8	16
10	20
12	24

2.

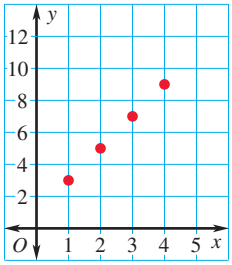
Input	Output
−2	−7
7	0
9	2
13	6
19	12

3.

Input	Output
−3	−15
3	−9
9	−3
15	3
21	9

Identify the ordered pairs in the graph. Then identify the domain and range.

4.



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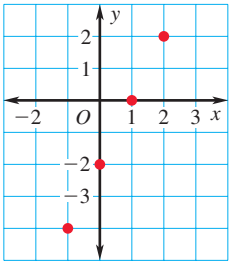

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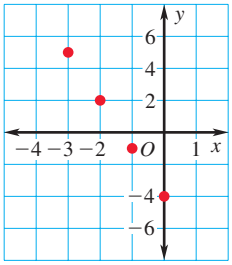


Make an input-output table for the function.

7. $y = \frac{2}{3}x - 4$

Domain: 6, 9, 12, 15

8. $y = 8 - 3x$

Domain: −1, 0, 1, 2

Graph the ordered pairs.

9. (1, 2.5), (3, 4), (5, 6.5), (7, 8), (9, 10.5)

10. (0.25, 1), (0.5, 4), (0.75, 7), (1, 10)

Graph the function.

11. $y = 8x + 1$

Domain: 0.5, 1, 1.5, 2, 2.5

12. $y = \frac{1}{2}x - 3$

Domain: 6, 7, 8, 9, 10

13. $y = 10 - 2x$

Domain: 1, 2, 3, 4, 5

14. $y = 4.5x + 2$

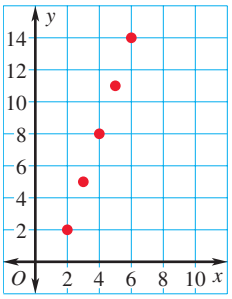
Domain: 1, 2, 3, 4, 5

UNIT 1

Exercise Set B *(continued)*

Write a rule for the function represented by the graph. Identify the domain and range of the function.

15.



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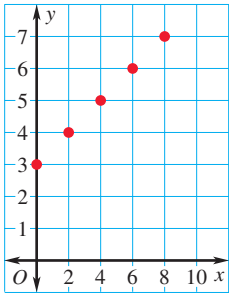

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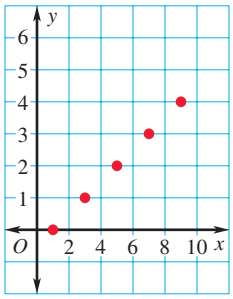

Write a rule for the function represented by the table. Identify the domain and range of the function.

18.

x	0	1	2	3
y	0	4	8	12

19.

x	10	20	30	40
y	1	2	3	4

20. **Multiple Representations** The table shows the profit P (in dollars) of a small sporting goods store as a function of time t (in months) since January. First copy and complete the table. Then graph the function represented by the first and third rows.

Months since January, *t*	1	2	3	4	5	6
Profit (dollars), *P*	3200	2500	2800	3000	4100	7400
Profit (thousands of dollars), *P*	?	?	?	?	?	?

21. **Wind Chill Temperatures** The table shows the wind chill temperature w (in degrees Fahrenheit), or how cold it feels to you depending on the wind speed, as a function of the actual temperature t (in degrees Fahrenheit).

Actual temperature (°F), *t*	40	35	30	25	20
Wind chill temperature (°F) for 10mi/h wind, *w*	34	27	21	15	9

a. Graph the function represented by the table.

b. *Describe* how the wind chill temperature changes as the actual temperature decreases.