

Review

Chapter 4

Lesson 4-1 Match each graph with its related table.

1.

2.

3.

A.

Time (s)	Height (m)
1	5
2	10
3	15
4	20

B.

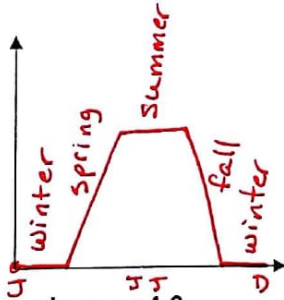
Time (s)	Height (m)
1	2
2	3
3	5
4	9

C.

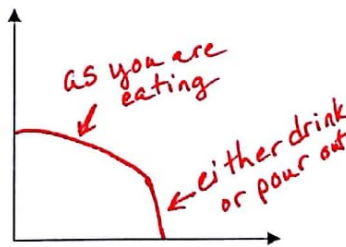
Time (s)	Height (m)
1	4
2	3
3	5
4	7

Sketch a graph to describe each situation. Label each section of the graph.

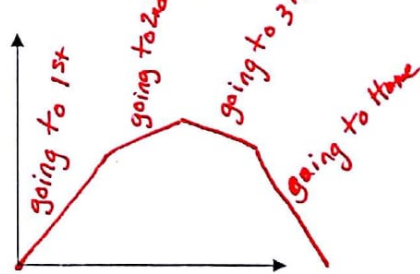
4. the number of apples on a tree over one year



5. the amount of milk in your bowl as you eat cereal

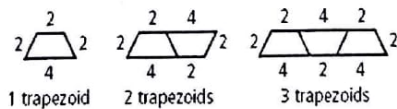


6. your distance from home plate during your home run



Lesson 4-2

7. For the diagram below, find the relationship between the number of shapes and the perimeter of the figure they form. Represent this relationship using a table and an equation.



Trapezoids	1	2	3	4	5	6	10	n
Perimeter	4	10	16				112	

$112 = 6x + 4$ ($x = 18$)

$6x + 4$

$6(10) + 4 = 64$

$y = 6x + 4$

Handwritten notes include: 22 , 28 , 34 , 40 , $+6$, b , m .

Represent each relationship using an equation.

8.

x	y
1	8
2	6
3	4
4	2

$$y = -2x + 10$$

9.

x	y
0	1
1	4
2	16
3	64

$$y = 4^x$$

10.

x	y
2	4
3	9
4	16
5	25

$$y = x^2$$

Lesson 4-3

Tell whether the function is *linear* or *nonlinear*.

11.

x	y
0	-2
1	1
2	4
3	7

+3
Linear

12.

x	y
0	-1
1	-1
2	-1
3	-1

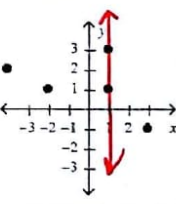
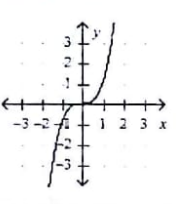
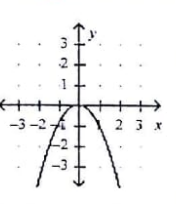
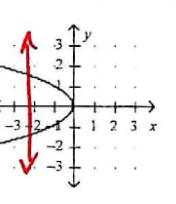
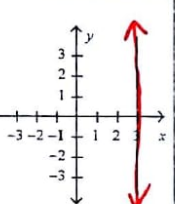
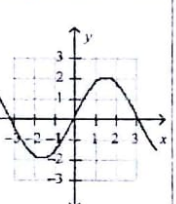
+0
Linear

13.

x	y
0	0
1	-1
2	3
3	5

-1
+4
+2
Non Linear

14. Determine whether each relation is a function. Write yes or no for each.

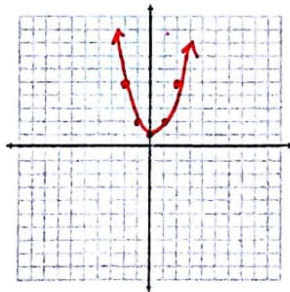
No	yes	yes	No	No	yes
					

Lesson 4-4

Graph each function (equation) by making a table.

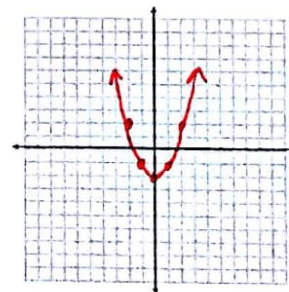
15. $y = |2x| + 1$

x	y
-2	5
-1	3
0	1
1	3
2	5



16. $y = x^2 - 2$

x	y
-2	2
-1	-1
0	-2
1	-1
2	2



$$\begin{aligned} (-2)^2 - 2 &= 2 \\ (-1)^2 - 2 &= -1 \\ (0)^2 - 2 &= -2 \\ 1^2 - 2 &= -1 \\ 2^2 - 2 &= 2 \end{aligned}$$

Lesson 4-5

Write a function (equation) rule that represents each sentence.

17. y is 4 more than the product of 7 and x

$$y = 7x + 4$$

18. y is 11 less than $\frac{1}{3}$ of x

$$y = \frac{1}{3}x - 11 \quad \text{or} \quad y = \frac{x}{3} - 11$$

19. 6.5 more than the quotient of x and 4 is y

$$\frac{x}{4} + 6.5 = y$$

Write a function rule for each situation in function notation.

20. the area of a 100-yard-long field $A(w)$ when you know the width w

$$A(w) = 100w$$

21. the distance run in feet $D(m)$ when you know the distance in miles m ($5280 \text{ ft} = 1 \text{ mi}$)

$$D(m) = 5,280m$$

22. Sammy has \$180 in her savings account and plans to deposit \$20 each month.

Write the function:	Define Independent Variable:	Define Dependent Variable:	Is it <i>continuous</i> or <i>discrete</i> ?
$y = 180 + 20x$	$x = \text{months}$	$y = \text{Total savings}$	Discrete

Lesson 4-6

Find the range (y-values) of each function when the domain is $\{-4, -1, 0, 3\}$ (x-values).

23. $f(x) = 6x - 5$
- $6(-4) - 5$
 $6(-1) - 5$
 $6(0) - 5$
 $6(3) - 5$

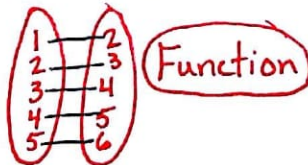
$$R: -29, -11, 1, 13$$

24. $f(x) = |x| - 2$
- $| -4 | - 2$
 $| -1 | - 2$
 $| 0 | - 2$
 $| 3 | - 2$

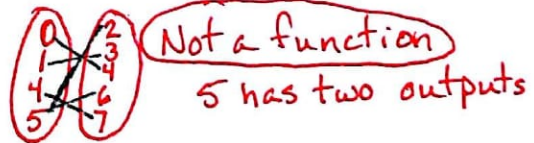
$$R: 2, -1, -2, 1$$

Use a mapping diagram to determine whether each relation is a function.

25. $\{(1, 2), (2, 3), (3, 4), (4, 5), (5, 6)\}$



26. $\{(5, 2), (1, 3), (4, 7), (5, 6), (0, 4)\}$



Evaluate each function rule to find the following x-values $\{1, 4, 9\}$.

27. The function $f(x) = 20 - x$ represents the amount of change you receive after paying for an item that costs x dollars with a \$20 bill.

$$f(1) = 20 - 1$$

$$f(4) = 20 - 4$$

$$f(9) = 20 - 9$$

$$f(1) = 19$$

$$f(4) = 16$$

$$f(9) = 11$$

28. The function $f(x) = x^2$ represents the area of a square with a side length of x .

$$f(1) = 1^2$$

$$f(4) = 4^2$$

$$f(9) = 9^2$$

$$f(1) = 1$$

$$f(4) = 16$$

$$f(9) = 81$$

Find a reasonable domain and range for the function

29. Consider the relation: $\{(4, 9), (6, 13), (4, 0), (-5, -9)\}$. State the domain and range.

D: -5, 4, 6 R: -9, 0, 9, 13

Is the relation a function? Explain.

No, 4 has two outputs.

30. A fruit punch recipe calls for 5 ounces of pineapple juice in every quart (q) of punch. The function $p(q) = 5q$ represents the amount of pineapple juice $p(q)$, in ounces, needed to make q quarts of fruit punch. You have a large punch bowl that can hold 8 quarts.

PineApple Juice D: $0 \leq x \leq 40$

Fruit Punch R: $0 \leq y \leq 8$

Know these Words:

x { Domain
Input
Independent
Function 1 in \rightarrow 1 out
Linear graph line
Mapping Diagram

y { Range
Output
Dependent
Relation
Non-Linear graph curve
Vertical Line Test



for graphs.
goes thru graph once = function
" " " more = non-function