

Lesson 1 Homework Practice

Representing Relationships

- 1. PRODUCTION** A manufacturer produces 950 light bulbs per day.
- Write an equation to find the number of bulbs b the manufacturer makes in any number of days d .
 - Use the equation to determine how many bulbs the manufacturer will make in 25 days.

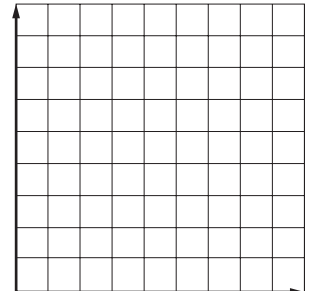
Days, d	Bulbs, b
1	950
2	1,900
3	2,850
4	3,800

- 2. WATER** The workers at a plant drink 38 gallons of water per day.
- Write an equation to find the number of gallons g the workers drink in any number of days d .
 - Use the equation to determine how many gallons of water the workers will drink in 30 days.

Days, d	Gallons, g
1	38
2	76
3	114
4	152

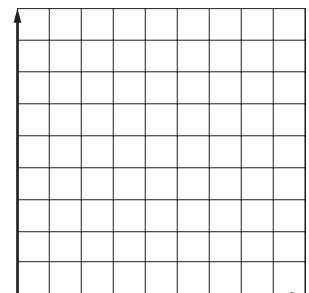
- 3. ALLOWANCE** Chet gets \$12 per week as allowance.
- Write an equation to find the amount of allowance a Chet receives in any number of weeks w .
 - Make a table to find the amount of allowance Chet receives in 5, 6, 7, or 8 weeks. Then graph the ordered pairs.

Weeks, w	Allowance, a



- 4. MEASUREMENT** There are 16 ounces in a pound.
- Write an equation to find the number of ounces n in any number of pounds p .
 - Make a table to find the number of ounces in 2, 3, 4, or 5 pounds. Then graph the ordered pairs.

Pounds, p	Ounces, n



Lesson 2 Homework Practice

Relations

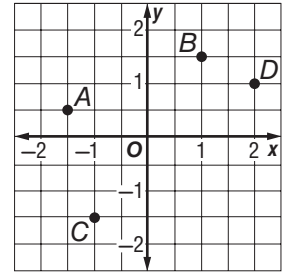
Name the ordered pair for each point.

1. *A*

2. *B*

3. *C*

4. *D*



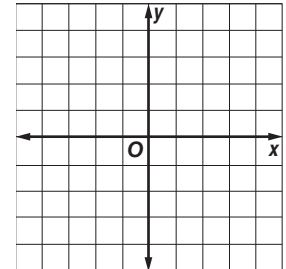
Graph each ordered pair on a coordinate plane.

5. $(1, \frac{1}{2})$

6. $(1, -2)$

7. $(-\frac{1}{2}, 2)$

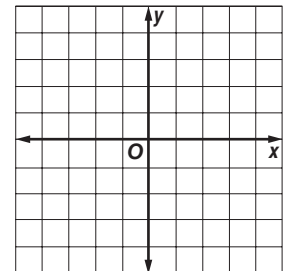
8. $(2, -\frac{1}{2})$



Express the relation as a table and a graph. Then state the domain and range.

9. $\{(3, -4), (2, 0), (-4, -1), (0, -3)\}$

<i>x</i>	<i>y</i>

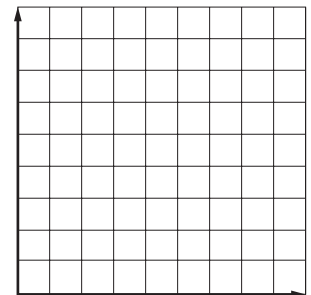


10. **TELEVISION** Alton pays \$48 per month for satellite television service.

- Make a table of ordered pairs in which the *x*-coordinate represents the number of months and the *y*-coordinate represents the total cost for 1, 2, 3, or 4 months.

<i>x</i>	<i>y</i>

- Graph the ordered pairs.



Lesson 3 Homework Practice

Functions

Find each function value.

1. $f(6)$ if $f(x) = 4x$

2. $f(8)$ if $f(x) = x + 11$

3. $f(3)$ if $f(x) = 2x + 4$

4. $f(5)$ if $f(x) = 3x - 2$

5. $f(-6)$ if $f(x) = 4x + 7$

6. $f(-14)$ if $f(x) = 2x - 3$

7. $f\left(\frac{2}{9}\right)$ if $f(x) = 3x + \frac{1}{3}$

8. $f\left(\frac{3}{4}\right)$ if $f(x) = 2x - \frac{1}{4}$

9. $f\left(\frac{4}{5}\right)$ if $f(x) = 4x - \frac{1}{5}$

Choose four values for x to make a function table for each function. Then state the domain and range of the function.

10. $f(x) = 5x - 4$

11. $f(x) = 2 - 3x$

12. $f(x) = 6 + 2x$

x	$5x - 4$	$f(x)$

x	$2 - 3x$	$f(x)$

x	$6 + 2x$	$f(x)$

13. $f(x) = x - 7$

14. $f(x) = 9x$

15. $f(x) = 3x + 5$

x	$x - 7$	$f(x)$

x	$9x$	$f(x)$

x	$3x + 5$	$f(x)$

16. **JACKETS** The school baseball team wants to have each player's name imprinted on the player's jacket. The cost is \$75 plus \$8.50 for each name. Write a function to represent the cost $c(n)$ for n names. What is the cost to have names imprinted on 25 jackets?

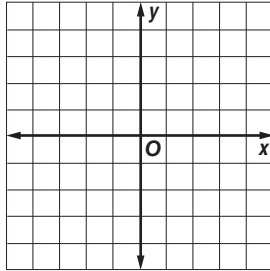
17. **LEMONADE** Gene sold 10 glasses of lemonade while setting up his lemonade stand. After opening, he sold an average of 20 glasses each hour. Write a function to represent the approximate number of glasses $g(h)$ sold after h hours. About when did he sell the 100th glass of lemonade?

Lesson 4 Homework Practice

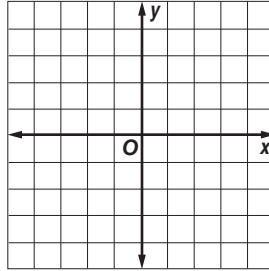
Linear Functions

Graph each function.

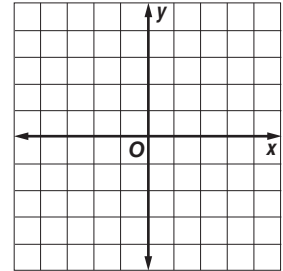
1. $y = 2x$



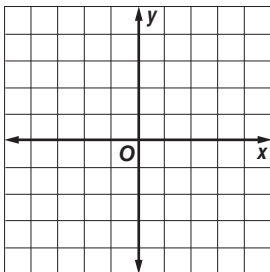
2. $y = -4x$



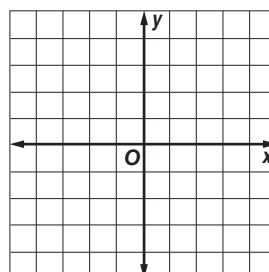
3. $y = x - 4$



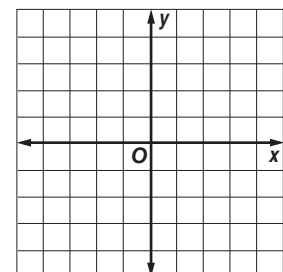
4. $y = x + 3$



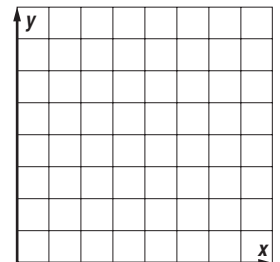
5. $y = 3x + 1$



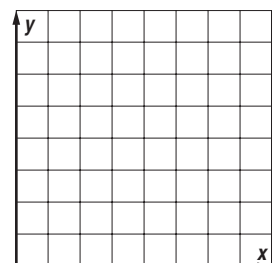
6. $y = \frac{1}{4}x + 2$



7. **CARPENTRY** Mrs. Valdez can assemble a chair in 1 day and a table in 4 days. Graph the function $y = 5 - \frac{1}{4}x$ to determine how many of each type of furniture Mrs. Valdez can assemble in 20 days. Is the function continuous or discrete? Explain.



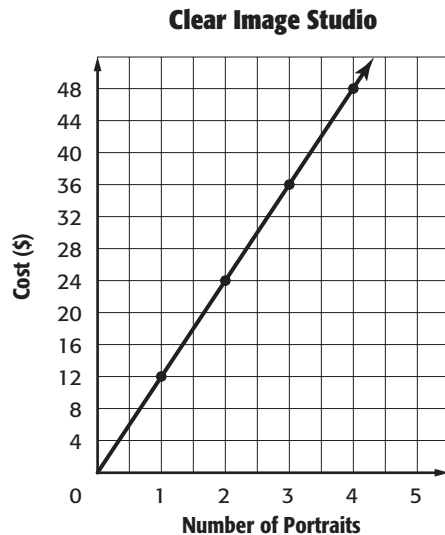
8. **FITNESS** A fitness center has set a goal to have 500 members. The fitness center already has 150 members and adds an average of 25 members per month. The function $f(x) = 150 + 25x$ represents the membership after x months. Graph the function to determine the number of months it will take for the fitness center to reach its membership goal. Is the function continuous or discrete? Explain.



Lesson 5 Homework Practice

Compare Properties of Functions

1. **PORTRAITS** Paolo's Portraits charges \$15 per photo with no sitting fee. The graph shows the fees for Clear Image Studio. Compare the functions by comparing their rates of change.

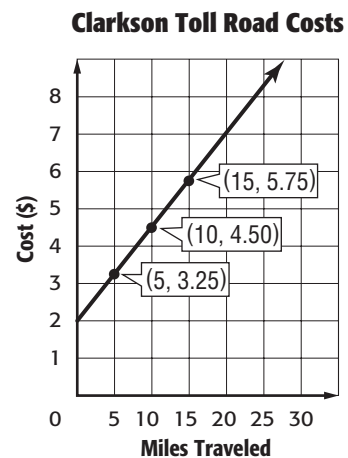


2. **COMMISSION** Joshua earns a salary plus a commission for every painting he sells. The equation $c = 40p + 75$, where c is the commission in dollars and p is the number of paintings, represents how much he earns. Martin's commissions are shown in the table. Compare the functions by comparing their y -intercepts and rates of change.

Number of Paintings Sold	1	2	3
Commission (\$)	115	150	185

3. **TOLL ROADS** The table shows the cost for traveling on a toll road in Henderson. The graph shows the cost of traveling on a toll road in Clarkson. Compare the linear functions to determine which is a direct variation. Justify your response.

Henderson Toll Road Costs	
Miles Traveled	Cost (\$)
10	3
20	6
30	9



Lesson 6 Homework Practice

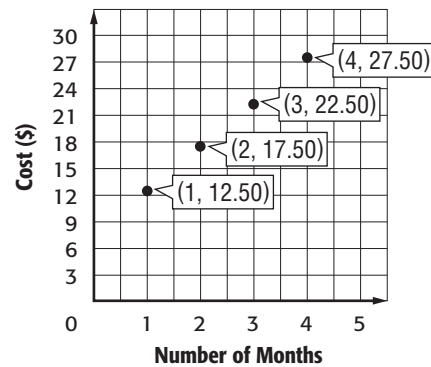
Construct Functions

Solve.

1. **FUNDRAISING** The Pep Club rented a shaved ice machine to sell shaved ice as a fundraiser. They paid an initial fee and then an hourly charge. The table shows the cost per hour. Find and interpret the rate of change and initial value. Assume the relationship between the two quantities is linear.

Number of Hours, x	2	3	4	5
Cost (\$), y	30	35	40	45

3. **MOVIES** Marcus is a member of a theater club. He pays a monthly fee and his movie tickets are then \$5 for an unlimited number of movies that month. The graph shows the cost for each month. Find the monthly fee.



2. **GARDENING** Simone planted a tomato plant and measured its height weekly. The total height at 2, 3, 4, and 5 weeks respectively were 13, 16, 19, and 22 inches tall. How tall was the tomato plant when Simone planted it? Assume the relationship is linear.

4. **PHOTOS** The cost of having photos taken includes a sitting fee and \$12 for each portrait. The cost of 3, 6, and 9 photos respectively is \$51, \$87, and \$123. What is the sitting fee?

Lesson 7 Homework Practice

Linear and Nonlinear Functions

Determine whether each table represents a *linear* or a *nonlinear* function. Explain.

1.

<i>x</i>	1	2	3	4
<i>y</i>	4	5	6	7

2.

<i>x</i>	0	2	4	6
<i>y</i>	2	6	18	38

3.

<i>x</i>	4	6.5	9	11.5	14
<i>y</i>	3	8	13	18	23

4.

<i>x</i>	1.5	3	4.5	6
<i>y</i>	2	4	8	16

5. The table shows the cost of long distance calls as a function of the number of minutes used. Is the cost a linear or nonlinear function of the number of minutes used? Explain.

Number of Minutes	40	80	120	160	200
Cost (\$)	4.00	8.00	12.00	16.00	20.00

6. **MINIMUM WAGE** The graph shows a state's minimum wage from 2005 to 2012. Would you describe the yearly increase as linear or nonlinear? Explain your reasoning.

