

# 8 - Exercises - Chapter 4

Name \_\_\_\_\_

Hour \_\_\_\_\_

## Lesson 3.1 Practice

## Constant Rate of Change

Determine whether the relationship between the two quantities described in each table is linear. If so, find the constant rate of change. If not, explain your reasoning.

1.

Greeting Cards	
Number of Cards	Total Cost(\$)
1	1.50
2	3.00
3	4.50
4	6.00

Linear, the constant rate of change is \$1.50 each Card.

2.

Party Table Rental	
Number of Tables	Cost(\$)
1	10
2	18
3	24
4	28

Not linear, the cost per table changes.

3.

Donuts	
Dozens Bought	Cost(\$)
2	3.25
4	6.50
6	9.75
8	13.00

Linear, the constant rate of change is \$3.25 per dozen.

4.

Running	
Time (min)	Distance (mi)
15	2
30	4
45	6
60	8

Linear, the constant rate of change is 2 miles for every 15 minutes.

## Lesson 3.2 Practice

## Slope

Find the slope of the line that passes through each pair of points.

5.  $A(0, 1), B(3, 4)$

$1$

6.  $C(1, -2), D(3, 2)$

$-2$

7.  $E(4, -4), F(2, 2)$

$-3$

8.  $G(3, 1), H(6, 3)$

$\frac{2}{3}$

9.  $I(4, 3), J(2, 4)$

$-\frac{1}{2}$

10.  $K(-4, 4), L(5, 4)$

$0$

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### Lesson 3.3 Practice

### Equations in $y = mx$ Form

Write an equation and solve the given situation.

11. Four friends bought movie tickets for \$41. The next day seven friends bought movie tickets for \$71.75. What is the price of one ticket?

$$C = 10.25t$$

$$\text{one ticket} = \\ \$10.25$$

12. Barney earns \$24.75 in three hours. If the amount he earns varies directly with the number of hours, how much would he earn in 20 hours?

$$m = 24.75h$$

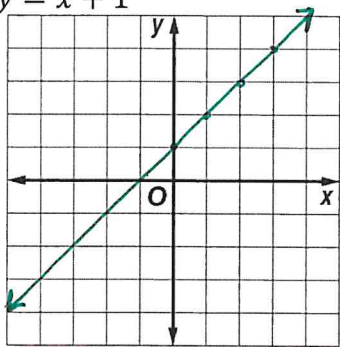
$$20 \text{ hours} = \\ \$495$$

### Lesson 3.4 Practice

### Slope-Intercept Form

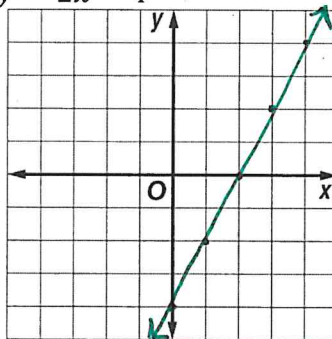
State the slope and the  $y$ -intercept for the graph of each equation. Graph the equation.

13.  $y = x + 1$



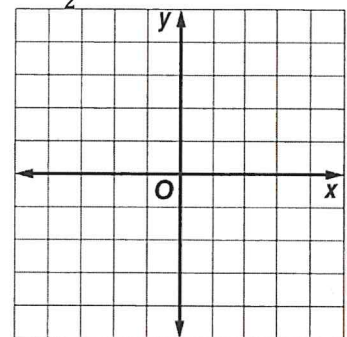
$$\text{Slope} = 1 \\ y\text{-intercept} = (0, 1)$$

14.  $y = 2x - 4$



$$\text{Slope} = 2 \\ y\text{-int} = (0, -4)$$

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



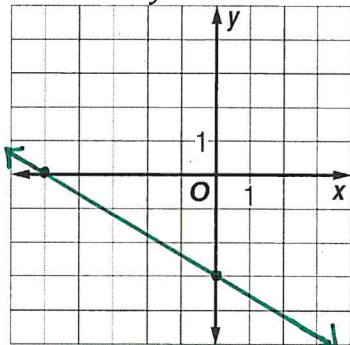
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### Lesson 3.5 Practice

### Graph a Line Using Intercepts

State the  $x$  - and  $y$  - intercepts of each function. Then graph the function.

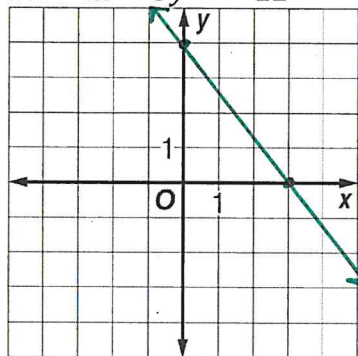
16.  $3x + 5y = -15$



x-intercept:  
 $(-5, 0)$

y-intercept:  
 $(0, -3)$

17.  $-4x - 3y = -12$



x-intercept:  
 $(3, 0)$

y-intercept:  
 $(0, 4)$

### Lesson 3.6 Practice

### Write Linear Equations

Write an equation in point-slope form and slope-intercept form for each line.

18. Passes through  $(-4, 0)$ , slope = 2

Point-slope:

$$y - 0 = 2(x + 4)$$

Slope-Int:

$$y = 2x + 4$$

19. Passes through  $(-2, -1)$ , slope =  $\frac{1}{2}$

Point-slope:

$$y + 1 = \frac{1}{2}(x + 2)$$

Slope-int.:

$$y = \frac{1}{2}x$$

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20. Passes through (3, -6) and (-2, 9)

Point-slope:  
 $y + 6 = -3(x - 3)$   
or  
 $y - 9 = -3(x + 2)$

Slope-int:  
 $y = -3x + 3$

21. Passes through (-4, -3) and (4, 13)

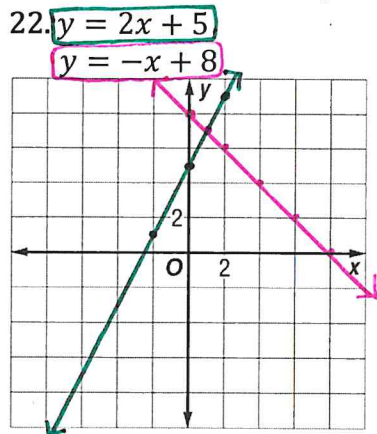
Point-slope:  
 $y - 13 = 2(x - 4)$   
or  
 $y + 3 = 2(x + 4)$

Slope-int:  
 $y = 2x + 5$

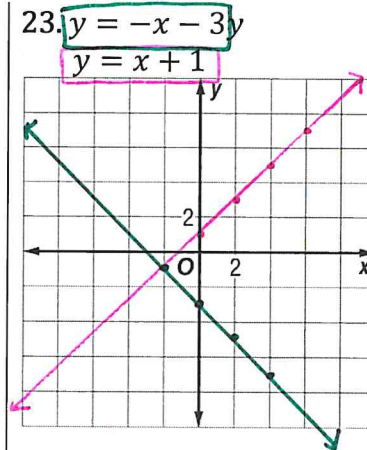
## Lesson 3.7 Practice

## Solve Systems of Equations by Graphing

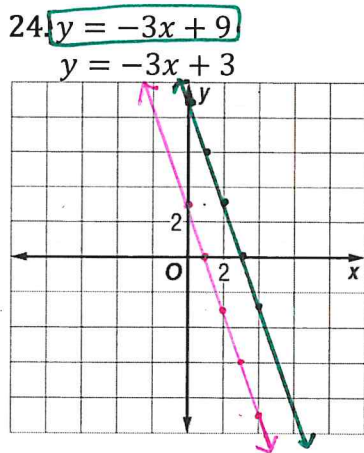
Solve each system of equation by graphing.



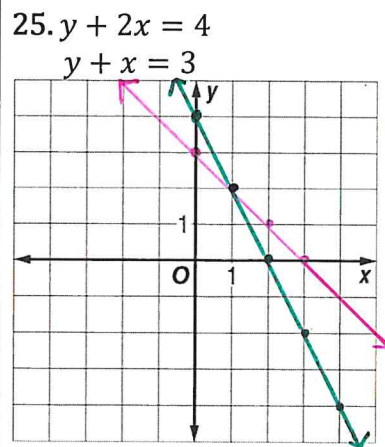
$(1, 7)$



$(-2, -1)$



Null Set



$(1, 2)$

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### Lesson 3.7 Practice

### Solve Systems of Equations Algebraically

Solve each system of equation algebraically.

$$26. \begin{aligned} y &= x + 3 \\ y &= 4x \end{aligned}$$

$$(1, 4)$$

$$27. \begin{aligned} y &= -x - 2 \\ y &= -2x \end{aligned}$$

$$(2, -4)$$

$$28. \begin{aligned} y + x &= -2 \\ 2x - 3y &= -9 \end{aligned}$$

$$(-3, 1)$$