Name _____ Date _____

LESSON 3.6

Practice B

For use with the lesson "Model Direct Variation"

Tell whether the equation represents direct variation. If so, identify the constant of variation.

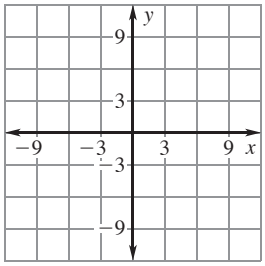
1. $y = 8x$

2. $y = 2x + 1$

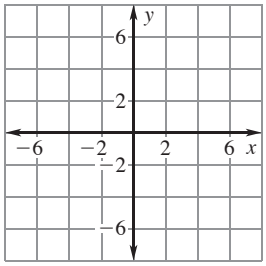
3. $3x + y = 6$

Graph the direct variation equation.

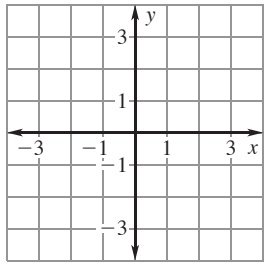
4. $y = 9x$



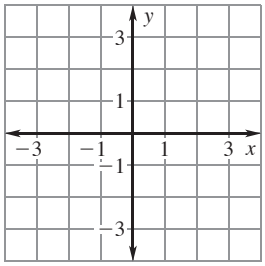
5. $y = -7x$



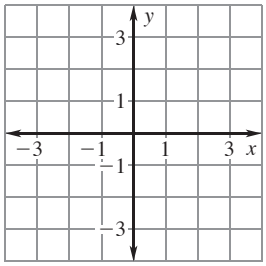
6. $3y = 4x$



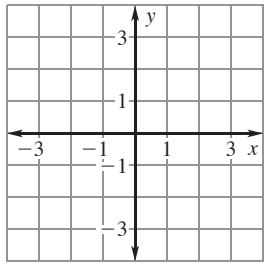
7. $4y = -12x$



8. $8y = x$

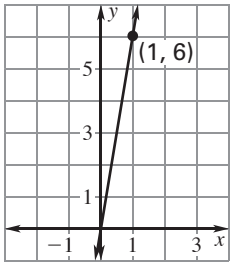


9. $8y = 6x$



The graph of a direct variation equation is shown. Write the direct variation equation. Then find the value of *y* when *x* = 10.

10.



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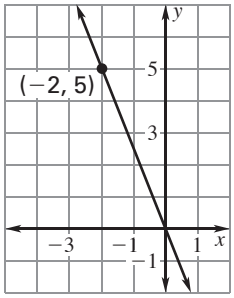

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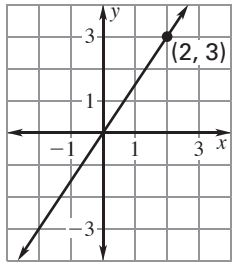

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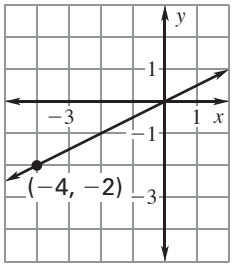

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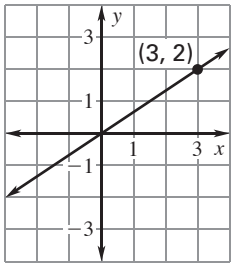

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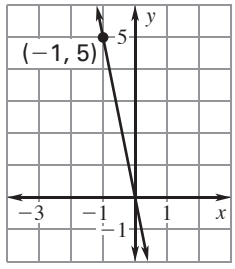


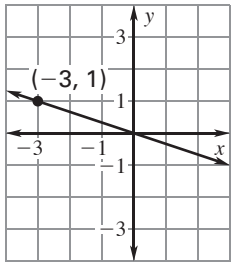
Name _____ Date _____

LESSON 3.6

Practice B *continued*

For use with the lesson "Model Direct Variation"

16.



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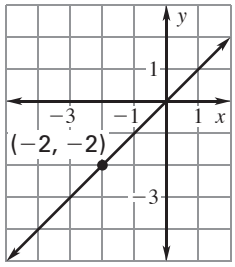

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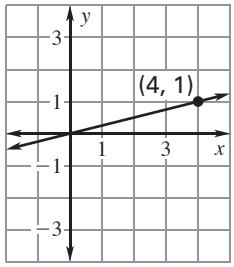


Tell whether the table represents direct variation. If so, write the direct variation equation.

19.

x	0.5	3	−2	1	−8
y	9	54	−36	18	−144

20.

x	−5	3	−2	10	20
y	−2	1.2	−0.8	4	8

21.

x	8	2	−4	−0.5	14
y	7	28	7	−112	4

22.

x	−0.2	−2	1	12	18
y	30	3	−6	−0.5	3

Given that *y* varies directly with *x*, use the specified values to write a direct variation equation that relates *x* and *y*.

23. $x = 24, y = 3$

24. $x = -16, y = -4$

25. $x = 28, y = -4$

26. $x = 5, y = -30$

27. $x = \frac{1}{6}, y = 1$

28. $x = 8, y = -3$

29. $x = 6, y = 102$

30. $x = -8, y = 64$

31. $x = 15, y = 9$

32. **Hooke's Law** The force F required to stretch a spring varies directly with the amount the spring is stretched s. Eight pounds is needed to stretch a spring 8 inches.

a. Write a direct variation equation that relates F and s.

b. How much force is required to stretch a spring 25 inches?

33. **Basement Waterproofing** One way to keep moisture out of your basement is to paint the walls with a waterproof paint. The number g (of gallons) of paint you need varies directly with the area A of the basement. One gallon of paint covers 100 square feet.

a. Write a direct variation equation that relates g and A.

b. How many gallons do you need to cover 530 square feet?

c. How many square feet does 8.5 gallons of paint cover?

34. **Downloading Files** The table shows the amount of time t (in seconds) it takes to download a file of size s (in kilobytes).

a. *Explain* why s varies directly with t.

b. Write a direct variation equation that relates s and t.

c. How long will it take to download an 800-kilobyte file? Round your answer to the nearest second.

Time, *t* (sec)	File size, *s* (kb)
15	420
30	840
45	1260

Lesson 3.6 Model Direct Variation

Teaching Guide

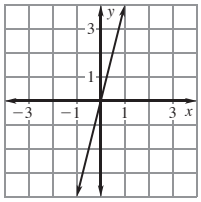
1–5. Answers will depend upon type of ruler used. **6.** The constant of variation is the thickness of the spine of one algebra book. So, the thickness of the stack varies directly with the number of algebra books used.

Practice A

1. yes; 2 **2.** no **3.** yes; -1 **4.** yes; 3 **5.** no

6. yes; $\frac{1}{6}$

7.



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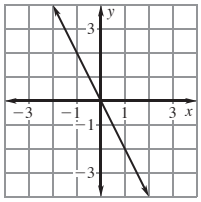

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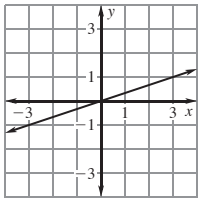

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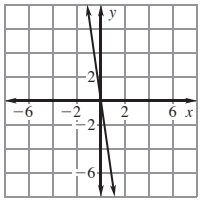

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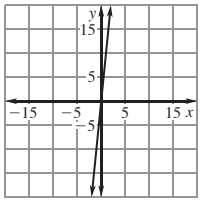

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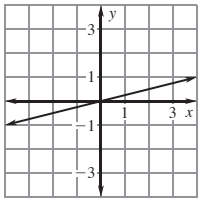


13. $y = 5x$; 50 **14.** $y = -6x$; -60

15. $y = -\frac{1}{2}x$; -5 **16.** $y = \frac{1}{5}x$; 2

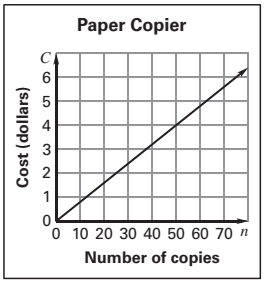
17. $y = -\frac{1}{4}x$; $-\frac{5}{2}$ **18.** $y = 3x$; 30 **19.** $y = 2x$

20. $y = 7x$ **21.** $y = -\frac{1}{4}x$ **22.** $y = -10x$

23. $y = \frac{2}{5}x$ **24.** $y = \frac{1}{10}x$ **25.** $y = -\frac{3}{10}x$

26. $y = \frac{1}{8}x$ **27.** $y = -15x$

28. a. $C = 0.08n$ **b.**



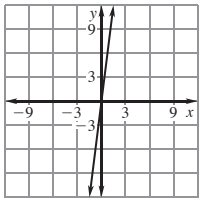
29. a. $w = 2.5m$ **b.** 12.5 gal

30. a. $C = 2\pi r$ **b.** 81.64 in.

Practice B

1. yes; 8 **2.** no **3.** no

4.



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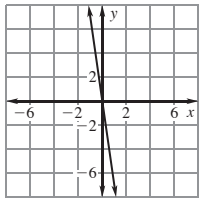

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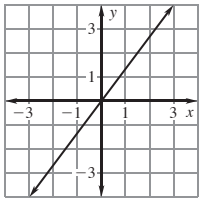

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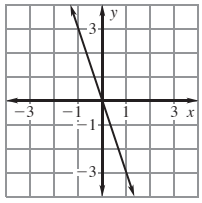

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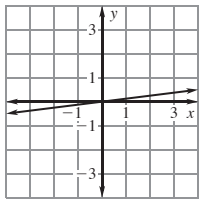

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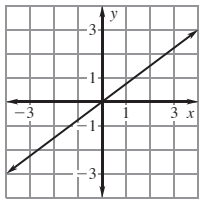


10. $y = 6x$; 60 **11.** $y = -\frac{5}{2}x$; -25

12. $y = \frac{3}{2}x$; 15 **13.** $y = \frac{1}{2}x$; 5 **14.** $y = \frac{2}{3}x$; $\frac{20}{3}$

15. $y = -5x$; -50 **16.** $y = -\frac{1}{3}x$; $-\frac{10}{3}$

17. $y = x$; 10 **18.** $y = \frac{1}{4}x$; $\frac{5}{2}$ **19.** yes; $y = 18x$

20. yes; $y = 0.4x$ **21.** no **22.** no

23. $y = \frac{1}{8}x$ **24.** $y = \frac{1}{4}x$ **25.** $y = -\frac{1}{7}x$

26. $y = -6x$ **27.** $y = 6x$ **28.** $y = -\frac{3}{8}x$

29. $y = 17x$ **30.** $y = -8x$ **31.** $y = \frac{3}{5}x$

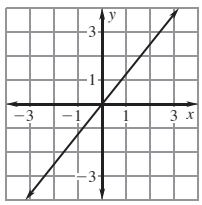
32. a. $F = s$ **b.** 25 lb **33. a.** $g = 0.01A$ **b.** 5.3 gal. **c.** 850 ft^2 **34. a.** Because the ratios for each data pair is 28, s varies directly with t. **b.** $s = 28t$ **c.** about 29 sec

Practice C

1. yes; 2 **2.** no **3.** yes; 5 **4.** yes; $\frac{8}{3}$

5. no **6.** no

7.



8.