

**2-1A** Lesson Master

**Questions on SPUR Objectives**  
See pages 125–129 for objectives.

**PROPERTIES** Objective E

In 1 and 2, three instances of a pattern are given. Describe the general pattern using one variable.

1.  $8 + 0 = 8$ ;  $\frac{1}{3} + 0 = \frac{1}{3}$ ;  $-5 + 0 = -5$

2.  $2.5 \cdot -1 = -2.5$ ;  $17 \cdot -1 = -17$ ;  $\frac{2}{5} \cdot -1 = -\frac{2}{5}$

**PROPERTIES** Objective F

In 3 and 4, give two instances of the pattern.

3.  $5n + 7n - 12n = 0$

4.  $c$  cows have  $4 \cdot c$  legs

**USES** Objective G

5. Three instances of a pattern are given. Describe the general pattern using variables.

The value of eight nickels is  $8 \cdot 0.05$ .

The value of eleven nickels is  $11 \cdot 0.05$ .

The value of fourteen nickels is  $14 \cdot 0.05$ .

**REPRESENTATIONS** Objective L

6. a. Fill in the table at the right.

b. Describe the pattern in words.

c. What value of  $n$  represents  
123,456 wheels? \_\_\_\_\_

7. In the table at the right, as values in  
Column 1 increase by 1, values in  
Column 2 also increase by 1. Fill in the table.

Number of Bicycles	Number of Wheels
1	2
2	4
3	
5	
20	
$n$	

Column 1	Column 2
1	3.4
2	4.4
3	5.4
4	6.4
5	
10	
$n$	

**2-1B Lesson Master****VOCABULARY**

1. Explain what a
- variable*
- is.
- 
- \_\_\_\_\_
- 
- \_\_\_\_\_
- 
- \_\_\_\_\_

**PROPERTIES**

Objective E: Given instances of a pattern, write a description of the pattern using variables.

In 2–5, three instances of a pattern are given. Describe the general pattern using one or more variables.

2.  $3 \times 6 = 6 + 6 + 6$

$3 \times -10 = -10 + -10 + -10$

$3 \times \frac{1}{2} = \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$   
\_\_\_\_\_

3.  $38 \div 1 = 38$

$-89.2 \div 1 = -89.2$

$5 \frac{3}{4} \div 1 = 5 \frac{3}{4}$   
\_\_\_\_\_

4.  $75\% \text{ of } 600 = \frac{3}{4} \cdot 600$

$75\% \text{ of } \frac{8}{15} = \frac{3}{4} \cdot \frac{8}{15}$

$75\% \text{ of } -54 = \frac{3}{4} \cdot -54$   
\_\_\_\_\_

5.  $6 \cdot 10 = 10 \cdot 6$

$0.7 \cdot 24 = 24 \cdot 0.7$

$\frac{1}{3} \cdot \frac{7}{8} = \frac{7}{8} \cdot \frac{1}{3}$   
\_\_\_\_\_

**PROPERTIES**

Objective F: Give instances of a pattern described with variables.

In 6–9, give two instances of the pattern.

6.  $d$  days have  $24 \cdot d$  hours.  
\_\_\_\_\_  
\_\_\_\_\_

7.  $a \cdot 0 = 0$   
\_\_\_\_\_  
\_\_\_\_\_

8.  $50\% \text{ of } n = \frac{n}{2}$   
\_\_\_\_\_  
\_\_\_\_\_

9.  $b + b + b + b = 4 \cdot b$   
\_\_\_\_\_  
\_\_\_\_\_

**USES** Objective G: Given instances of a real-world pattern, write a description of the pattern using variables.

In 10 and 11, study the given instances of a pattern. Describe the general pattern using variables.

10. 1 chandelier has 5 light bulbs.  
 2 chandeliers have 10 light bulbs.  
 3 chandeliers have 15 light bulbs.

11. The sales tax on \$2 is 7% of \$2.  
 The sales tax on \$400 is 7% of \$400.  
 The sales tax on \$55.23 is 7% of \$55.23.

**REPRESENTATIONS** Objective L: Represent a relationship between two variables using a table.

In 12 and 13, use the table at the right.

12. a. Fill in the table.  
 b. Describe this pattern in words.

\_\_\_\_\_

\_\_\_\_\_

13. If there are 400 greeting cards, how many packs of greeting cards are there?

\_\_\_\_\_

14. The table at the right shows the cost of bottled water purchased from a vending machine. Fill in the blanks in the second column. Write the formula for the total cost  $C$  in terms of the number of bottles  $n$ .

\_\_\_\_\_

Number of Packs of Greeting Cards	Number of Greeting Cards
1	8
2	16
3	
4	
5	
$n$	

Number of Bottles	Total Cost (in \$)
1	
2	
3	3.75
4	
5	
15	
$n$	

**2-2A Lesson Master**Questions on SPUR Objectives  
See pages 125–129 for objectives.**SKILLS** Objective CIn 1–9, translate into mathematical symbols. Let  $n$  stand for any unknown "number."

1. fourteen less 9 \_\_\_\_\_
2. fourteen less than 9 \_\_\_\_\_
3. Fourteen is less than 9. \_\_\_\_\_
4. the sum of 8 and 5 \_\_\_\_\_
5. five more than twice a number \_\_\_\_\_
6. a number divided into the square of 16 \_\_\_\_\_
7. twelve plus the product of 9 and a number \_\_\_\_\_
8. eighteen increased by the product of a number and  $-2$  \_\_\_\_\_
9. Half of a number is less than 7. \_\_\_\_\_
10. Write two possible English expressions for  $\frac{w}{16}$ .  
\_\_\_\_\_  
\_\_\_\_\_
11. If each class is forty-five sixtieths of an hour long, write an algebraic expression for the length of  $N$  classes. \_\_\_\_\_
12. If  $S$  students go to a camp one summer, and the number of students triples the next summer, write an algebraic expression for the number of students at the camp during the second summer. \_\_\_\_\_
13. If renting a van costs \$19.95 and you must pay \$0.59 for each mile driven, write an algebraic expression for the cost to rent and drive the van on a trip that is  $m$  miles long. \_\_\_\_\_

Name \_\_\_\_\_

## 2-2B Lesson Master

### VOCABULARY

1. Explain what an *algebraic expression* is and give two examples.

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In 2–4, write two possible word expressions for each.

2.  $9 + 2$

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3.  $8 \times 4$

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4.  $\frac{7}{9}$

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### SKILLS

Objective C: Write a numerical or algebraic expression for an English expression involving arithmetic operations.

In 5–10, translate into mathematical symbols.

5. six less than 10

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6. ten less than 6

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7. Ten is greater than six.

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8. five times 9

---

9. nine divided by 5

---

10. nine into 5

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In 11–20, translate into an algebraic expression. Let  $n$  stand for any unknown “number.”

11. the product of 7 and a number  
\_\_\_\_\_12. 16 more than a number  
\_\_\_\_\_13. 40 less a number  
\_\_\_\_\_14. a number divided by 13  
\_\_\_\_\_15. 27 less than a number  
\_\_\_\_\_16. the sum of a number and 1  
\_\_\_\_\_17. 16% of a number  
\_\_\_\_\_18. 11 increased by twice a number  
\_\_\_\_\_19. half a number less than 32  
\_\_\_\_\_20. the square of a number  
\_\_\_\_\_21. Suppose a book cost  $B$  dollars. What is the cost of a radio if it costs \$8 more than the book? Write an algebraic expression to show how much the radio costs.  
\_\_\_\_\_22. Mario can read  $x$  pages per hour. How many can he read in 3 hours? Write an algebraic expression to show how many pages Mario can read in 3 hours.  
\_\_\_\_\_23. If you divide  $m$  magazines equally into four piles, how many magazines are in each pile? Write an algebraic expression to show how many magazines are in each pile.  
\_\_\_\_\_**REVIEW** Lesson 2-1, Objective F

24. Three instances of a pattern are given. Describe the general pattern using one variable.

The value of three quarters is \$3(0.25).  
\_\_\_\_\_The value of six quarters is \$6(0.25).  
\_\_\_\_\_The value of nine quarters is \$9(0.25).  
\_\_\_\_\_



Name \_\_\_\_\_

## 2-3B Lesson Master

### VOCABULARY

1. Consider the algebraic expression  $7b - 4$ . Explain the difference between the value of the variable and the value of the expression.

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**SKILLS** Objective A: Evaluate algebraic expressions given the values of all variables in them.

In 2–11, evaluate each expression if  $a = 4$ ,  $b = 8$ ,  $n = 12$ , and  $p = 3.5$ .

	Substitution	Value
2. $\frac{n}{2}$	_____	_____
3. $20 + a$	_____	_____
4. $6.2n$	_____	_____
5. $an$	_____	_____
6. $p^2$	_____	_____
7. $3b - 2n$	_____	_____
8. $ab^2$	_____	_____
9. $\pi n^2$	_____	_____
10. $b + np \div a$	_____	_____
11. $30 + n - n + n - n$	_____	_____

In 12–15, let  $m = 3$  and  $r = 6$ .

12. $8m + 2r$	_____	_____
13. $r^4$	_____	_____
14. $mr^2 - 2m^2$	_____	_____
15. $5r^m$	_____	_____



In 16–23, a. translate into an algebraic expression using the variable  $n$ ;  
b. evaluate that expression when  $n$  has the value 9.

16. twice a number

a. \_\_\_\_\_

b. \_\_\_\_\_

17. a number minus 6

a. \_\_\_\_\_

b. \_\_\_\_\_

18. the second power of a number

a. \_\_\_\_\_

b. \_\_\_\_\_

19. 22 more than 6 times a number

a. \_\_\_\_\_

b. \_\_\_\_\_

20. 13 less than the product of a number and 10

a. \_\_\_\_\_

b. \_\_\_\_\_

21. The number of trumpets in the band has gone down by three.

a. \_\_\_\_\_

b. \_\_\_\_\_

22. Your hourly salary has been increased by \$1.50 an hour.

a. \_\_\_\_\_

b. \_\_\_\_\_

23. This year, the total amount of snow was 4 inches more than twice the amount that fell last year.

a. \_\_\_\_\_

b. \_\_\_\_\_

In 24–26, a. translate into an algebraic expression using the variable  $x$ ;  
b. evaluate that expression when  $x$  has the value 6.

24. twice a number, increased by the same number

a. \_\_\_\_\_

b. \_\_\_\_\_

25. eight less than the product of 60 and a number

a. \_\_\_\_\_

b. \_\_\_\_\_

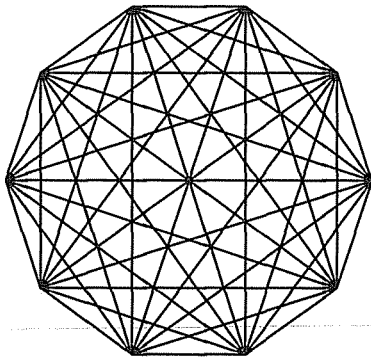
26. This year, Ms. Ortiz mailed 5 more than double the number of orders she sent last year.

a. \_\_\_\_\_

b. \_\_\_\_\_

**2-4A Lesson Master**Questions on SPUR Objectives  
See pages 125–129 for objectives.**USES** Objective H

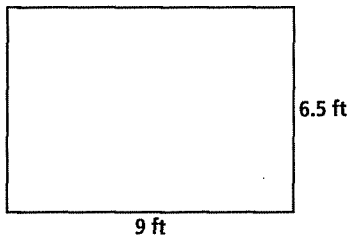
1. Let  $F$  be a temperature in degrees Fahrenheit, and let  $C$  be the same temperature in degrees Celsius. The formula  $F = \frac{9}{5}C + 32$  gives the relationship between  $F$  and  $C$ . Use this formula to find  $20^\circ\text{C}$  in degrees Fahrenheit.  
\_\_\_\_\_
2. The area of a triangle can be calculated by using the formula  $A = \frac{1}{2}bh$ , where  $A$  is the area,  $b$  is the length of the base, and  $h$  is the height. Use this formula to find the area of a triangle with a base of 8 ft and a height of 1.5 ft.  
\_\_\_\_\_
3. Winning percentage  $P$  can be calculated by using the formula  $P = \frac{W}{W+L}$  where  $W$  is the number of games won and  $L$  is the number of games lost. In 2006, the Pittsburgh Steelers won Super Bowl XL after a season of 11 wins and 5 losses. What was the team's winning percentage to the nearest tenth of a percent for that season?  
\_\_\_\_\_
4. The circumference of a circle can be calculated by using the formula  $C = 2\pi r$ , where  $C$  is the circumference and  $r$  is the radius. Find the circumference of a circle with radius 18 cm.  
\_\_\_\_\_
5. The formula  $d = \frac{n(n-3)}{2}$  gives the number of diagonals in a polygon, where  $d$  is the number of diagonals and  $n$  is the number of sides of the polygon. Find the number of diagonals of a decagon (10-sided polygon).  
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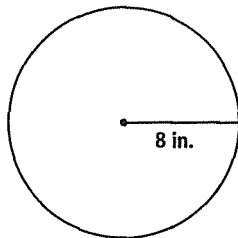
**2-4B Lesson Master**

**USES** Objective H: Calculate the value of a variable given the values of other variables in a formula.

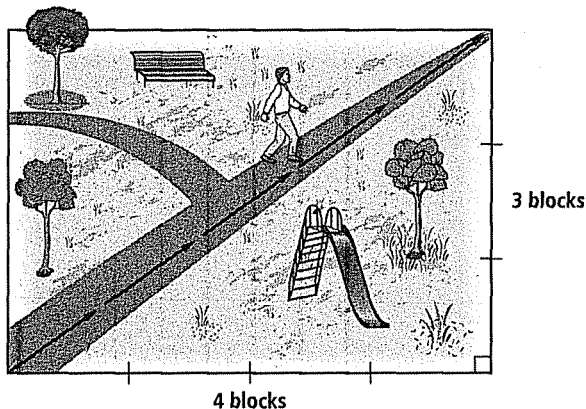
1. The perimeter of a rectangle can be found by using the formula  $P = 2(\ell + w)$ , where  $P$  is the perimeter,  $\ell$  is the length, and  $w$  is the width. Find the perimeter of a rectangle that is 9 feet long and 6.5 feet wide.



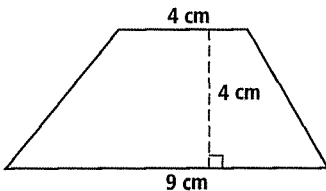
2. The area of a circle can be found by using the formula  $A = \pi r^2$ , where  $A$  is the area and  $r$  is the radius. Find the area of a circle that has a radius of 8 inches.



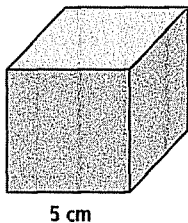
3. Use the formula  $a^2 + b^2 = c^2$ , where  $a$  and  $b$  are the lengths of two sides of a right triangle and  $c$  is the length of the longest side of the right triangle. A rectangular park is 3 blocks by 4 blocks. If you walk through the park from one corner straight to the opposite corner (or on the diagonal), how far do you walk?



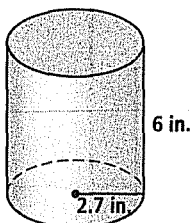
4. Crickets chirp at different speeds, depending on the outside temperature. You can find the outside temperature in degrees Fahrenheit,  $F$ , based on the number of chirps per minute by a cricket,  $c$ , by using the formula  $F = (c \div 4) + 37$ . Find the outside temperature in degrees Fahrenheit when a cricket chirps 140 times per minute.
5. The formula for the area of a trapezoid is  $A = \frac{1}{2}(b_1 + b_2)h$ , where  $A$  is the area,  $b_1$  and  $b_2$  are the lengths of the bases (the parallel sides), and  $h$  is the height. Find the area of a trapezoid that is 4 cm high with bases of 4 cm and 9 cm.



6. A formula for the surface area of a cube is  $S = 6e^2$ , where  $S$  is the surface area (the total area of the six faces) and  $e$  is the edge length. Find the surface area of a cube with edges of 5 cm.



7. Let  $F$  be a temperature in degrees Fahrenheit, and  $C$  the same temperature in degrees Celsius. The formula  $C = \frac{5}{9}(F - 32)$  gives the relationship between  $F$  and  $C$ . Use the formula to find  $50^\circ\text{F}$  in degrees Celsius.
8. The formula for the surface area of the side of a cylinder is  $S = 2\pi rh$ , where  $S$  is the surface area,  $r$  is the radius of a base of the cylinder, and  $h$  is the height of the cylinder. Find the surface area of the side of a cylinder that has a base of radius 2.7 inches and a height of 6 inches.



**2-5A Lesson Master**

**Questions on SPUR Objectives**  
See pages 125–129 for objectives.

**PROPERTIES** Objective D

In 1–4, the lengths of two legs of a right triangle are given. Calculate the hypotenuse.

1. 1, 2.4

\_\_\_\_\_

2. 4, 8

\_\_\_\_\_

3. 15, 36

\_\_\_\_\_

4. 1.5, 2

\_\_\_\_\_

**USES** Objective I

5. Can the numbers 12, 16, and 18 be a Pythagorean Triple?  
Why or why not?

\_\_\_\_\_

\_\_\_\_\_

6. *Multiple choice.* A right triangle has a hypotenuse of 169. Which of the following could be the lengths of the legs?

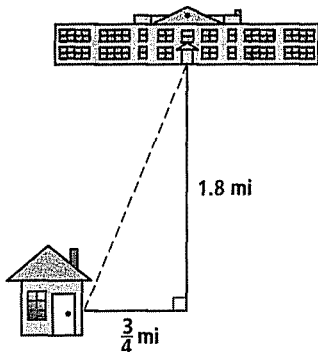
A 5, 12

B 65, 156

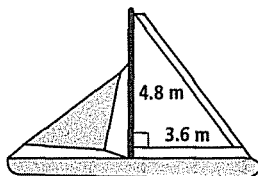
C 25, 144

D 121, 144

7. Marcos walks  $\frac{3}{4}$  of a mile east and 1.8 miles north to school every morning. If instead he walked in a straight line from his home to school, how many miles would he walk?



8. On a triangular sail, the horizontal leg is called the foot, the vertical leg is called the luff, and the hypotenuse is called the leech. If a sailboat's main sail has a 3.6-meter foot and a 4.8-meter luff, how long is the leech?

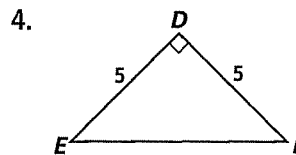
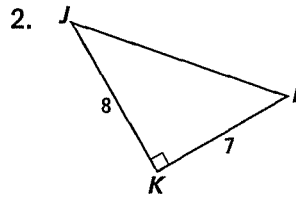
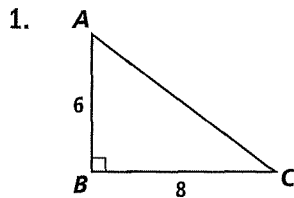


## 2-5B Lesson Master

### PROPERTIES

Objective D: Find the length of the hypotenuse of a right triangle using the Pythagorean Theorem.

In 1–4, find the hypotenuse of each triangle. Round the results to the nearest tenth.



5. Draw a right triangle in the space at the right. Measure each side to the nearest millimeter. Show that the Pythagorean Theorem works for this triangle. How would you explain any errors?

\_\_\_\_\_

\_\_\_\_\_

6. Draw a triangle at the right with three acute angles and sides of different lengths,  $a$ ,  $b$ , and  $c$ .

\_\_\_\_\_

a. Measure  $a$ ,  $b$ , and  $c$  to the nearest millimeter.

$a$  = \_\_\_\_\_

$b$  = \_\_\_\_\_

$c$  = \_\_\_\_\_

b. Does  $a^2 + b^2 = c^2$ ? Why do you think this is so?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**USES** Objective I: Use the Pythagorean Theorem to find distances in real situations.

In 7–11, find the answer to the nearest tenth. It may help to draw a picture first.

7. How long is the diagonal of a rectangle with dimensions 7 in. by 10 in.? \_\_\_\_\_
8. On a coordinate grid, what is the distance between (2, 2) and (5, 7)? \_\_\_\_\_
9. A rectangular parking lot is 200 m by 260 m. To get from one corner of the lot to the opposite corner, how much shorter is the route that cuts along the diagonal instead of following along the sides of the lot? \_\_\_\_\_
10. A pole is slid into a closet so that one end touches the back upper right corner of the closet and the other end touches the front lower left corner of the closet. What is the tallest pole that can fit in this closet, which is 3 feet wide, 4 feet deep, and 7 feet high? (Ignore the diameter of the pole.) \_\_\_\_\_
11. Football players A and B are both on the 10-yard line. Player A, who has the ball, is 5 yards away from Player B. Player A runs straight down the field 20 yards and is tackled by Player B who runs at a diagonal. How much farther did Player B run than Player A? \_\_\_\_\_

### VOCABULARY

12. What is the Rule of Pythagoras, which should not be confused with the Pythagorean Theorem?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

13. Use the Rule of Pythagoras to find the other leg and the hypotenuse of a right triangle for each leg with value  $m$ .

a.  $m = 7$

\_\_\_\_\_ ; \_\_\_\_\_

b.  $m = 17$

\_\_\_\_\_ ; \_\_\_\_\_

c.  $m = 27$

\_\_\_\_\_ ; \_\_\_\_\_

# 2-6A Lesson Master

Questions on SPUR Objectives  
See pages 125–129 for objectives.

## REPRESENTATIONS Objective K

1. Describe a situation where it would be useful to use a spreadsheet.

\_\_\_\_\_

\_\_\_\_\_

In 2–10, George, Ira, Aisha, and Sasha are running to raise money for Multiple Sclerosis research. The spreadsheet below gives the distance each is running and the number of dollars each has raised per kilometer run.

	A	B	C	D
1	Runner	Distance Run in Kilometers	Dollars Raised per Kilometer	Total Amount Raised
2	George	10	12	
3	Ira	20	10	
4	Aisha	25	10	
5	Sasha	15	14	
6			Total dollar amount	
7			Average dollars raised per person	

2. What is in cell A3? \_\_\_\_\_
3. Write a formula for cell D2. \_\_\_\_\_
4. What is the value of cell D2? \_\_\_\_\_
5. What is the value of cell D3? \_\_\_\_\_
6. What is the value of cell D4? \_\_\_\_\_
7. What is the value of cell D5? \_\_\_\_\_
8. a. Write a spreadsheet formula to enter in cell D6 for the amount of money raised by all four runners combined. \_\_\_\_\_
- b. Evaluate the formula from Part a. \_\_\_\_\_
9. a. Write a spreadsheet formula to be entered in cell D7 for the average dollars raised per person. \_\_\_\_\_
- b. Evaluate the formula from Part a. \_\_\_\_\_
10. Is “Total Amount Raised” an independent or a dependent variable? \_\_\_\_\_



**2-6B Lesson Master****REPRESENTATIONS**

**Objective K:** Use a calculator or spreadsheet to construct formulas and apply them to real-life situations.

1. Give one reason why the use of spreadsheets is so convenient.

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2. a. Complete this spreadsheet. Use 12% to determine shipping and handling costs.

	A	B	C	D
<b>1</b>	Item	Price	Shipping and Handling	Total Cost
<b>2</b>	Toaster	29.75		
<b>3</b>	Shoes	54.99		
<b>4</b>	CD set	12.40		
<b>5</b>	Portable DVD Player	169.50		
<b>6</b>	GrandTotal			

- b. What entry is in cell A3? \_\_\_\_\_

- c. "Price" is in what cell? \_\_\_\_\_

- d. Write a formula for cell C2. \_\_\_\_\_

- e. Write a formula for cell D2. \_\_\_\_\_

- f. Write a formula for cell B6. \_\_\_\_\_

- g. What is the value of cell D6? \_\_\_\_\_

- h. Describe how you would complete filling in the cells of the spreadsheet after completing Parts d, e, and f.

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- i. Is "Price" an independent or a dependent variable? \_\_\_\_\_

3. Complete the spreadsheet.

	A	B	C	D
1	1	2	1	2
2	2	4	3	12
3	3	6	5	30
4	4			
5	5			

4. Write a formula for each column listed below.

a. column B in terms of column A

\_\_\_\_\_

b. column C in terms of either column A or B

\_\_\_\_\_

c. column D in terms of columns B and C

\_\_\_\_\_

5. At the bottom of the page, design a spreadsheet such as the one begun at the right to determine both the average attendance per day in four classrooms during three days and the average attendance over three days per classroom.

	A	B	C	D	E
1	Classroom	Day 1	Day 2	Day 3	Average
2	Room 1				
3	Room 2				

a. Write a formula to find each of the following.

average attendance on Day 1

\_\_\_\_\_

average attendance on Day 2

\_\_\_\_\_

average attendance on Day 3

\_\_\_\_\_

b. Write a formula to find each of the following.

average attendance in Room 1

\_\_\_\_\_

average attendance in Room 2

\_\_\_\_\_

average attendance in Room 3

\_\_\_\_\_

average attendance in Room 4

\_\_\_\_\_

c. How could a student avoid typing in each formula more than once on a spreadsheet?

\_\_\_\_\_

\_\_\_\_\_

**2-7A Lesson Master****Questions on SPUR Objectives**  
See pages 125–129 for objectives.**SKILLS** Objective B**Multiple Choice.** In 1–6, choose a correct solution to the sentence.

1.  $3x^2 - 4 = 23$

A  $x = 3$

B  $x = 4$

C  $x = 5$

D  $x = 6$  \_\_\_\_\_

2.  $8 - 4y = 2$

A  $y = 1$

B  $y = 1.5$

C  $y = 2$

D  $y = 2.5$  \_\_\_\_\_

3.  $\frac{1}{4}z = 23$

A  $z = 575$

B  $z = 5.75$

C  $z = 92$

D  $z = 9.2$  \_\_\_\_\_

4.  $y - 0.5 = 70$

A  $y = 70$

B  $y = 70.5$

C  $y = 75$

D  $y = 77$  \_\_\_\_\_

5.  $4 - 2x \leq 3$

A  $x = 0.2$

B  $x = \frac{1}{4}$

C  $x = \frac{1}{3}$

D  $x = \frac{1}{2}$  \_\_\_\_\_

6.  $r + 4r > 90$

A  $r > 12$

B  $r > 15$

C  $r > 18$

D  $r > 21$  \_\_\_\_\_

In 7–15, give a solution for each sentence.

7.  $8x = 0$  \_\_\_\_\_

8.  $r + 12 = 24$  \_\_\_\_\_

9.  $10 = p \cdot (4 - 2)$  \_\_\_\_\_

10.  $n^2 \geq 37$  \_\_\_\_\_

11.  $11 - h < 6$  \_\_\_\_\_

12.  $20d = 400$  \_\_\_\_\_

13. There are  $s$  states in the United States. \_\_\_\_\_14. Every triangle has  $a$  angles. \_\_\_\_\_15. There are  $d$  days in two weeks. \_\_\_\_\_

**2-7B Lesson Master****VOCABULARY**

1. A sentence with an equal sign is called a(n) \_\_\_\_\_.
2. A sentence with one or more variables that can be true or false, depending on what is substituted for the variables, is called a(n) \_\_\_\_\_.

**SKILLS** Objective B: Find solutions to equations and inequalities involving simple arithmetic.

*Multiple Choice.* In 3–10, choose a correct solution to the sentence.

3.  $3.8 + x = 8.6$

- A 5.8                      B 4.8                      C 5.2                      D 4.6                      \_\_\_\_\_

4.  $4b^2 = 100$

- A 5                      B 2.5                      C 12.5                      D 10                      \_\_\_\_\_

5.  $48 - 3c^2 = 0$

- A 16                      B 4                      C 48                      D 8                      \_\_\_\_\_

6.  $x < -9$

- A 98                      B -11                      C -8                      D -9                      \_\_\_\_\_

7.  $13.5 \geq n$

- A 15                      B 13.8                      C 13.5                      D 17.4                      \_\_\_\_\_

8.  $\left(\frac{1}{5}\right)w = 32$

- A 160                      B 16                      C 6.4                      D 31.8                      \_\_\_\_\_

9.  $45 + 5x - 10 = 85$

- A 50                      B 5                      C 1.9                      D 10                      \_\_\_\_\_

10.  $-22 > p > -23$

- A -24                      B -23.5                      C -22.5                      D -22                      \_\_\_\_\_

In 11–24, give a solution for each sentence.

11.  $\frac{a}{8} = 0$  \_\_\_\_\_

12.  $d(2 + 6) = 24$  \_\_\_\_\_

13.  $0 + r = 13$  \_\_\_\_\_

14.  $a + a = 18$  \_\_\_\_\_

15.  $u \cdot 72 = 72$  \_\_\_\_\_

16.  $\frac{50}{x} = 25$  \_\_\_\_\_

17. There are  $y$  years in a decade. \_\_\_\_\_18. January has  $d$  days. \_\_\_\_\_19. There are  $c$  cups in a pint. \_\_\_\_\_20. Every insect has  $l$  legs. \_\_\_\_\_21. A pound is made of  $z$  ounces. \_\_\_\_\_22. An octagon has  $a$  angles. \_\_\_\_\_23. Intelligent life has been discovered on  $p$  planets. \_\_\_\_\_24. A right angle measures  $d$  degrees. \_\_\_\_\_

**Multiple choice.** In 25–28, find all choices that are solutions.

25.  $m > 6.7$

A 6.9

B 6.4

C 6.7

D -9.9

\_\_\_\_\_

26.  $-4 \leq r$

A 0

B -5

C -4

D -3

\_\_\_\_\_

27.  $-15 \leq h$

A -20

B 0

C -15

D -12

\_\_\_\_\_

28.  $11 \geq w > -4$

A -4

B -1

C -3.8

D -11

\_\_\_\_\_

29. **Multiple choice.** Which is a solution to  $-17 > t > -18$ ?

A -19

B -18

C -17.5

D -16

\_\_\_\_\_

30. **Multiple choice.** Give two solutions for  $-5 \leq y$ .

A -7

B -5

C -5.5

D -3

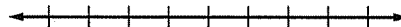
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# 2-8A Lesson Master

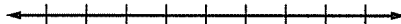
Questions on SPUR Objectives  
See pages 125–129 for objectives.

## REPRESENTATIONS Objective J

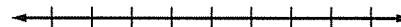
1. Graph all solutions to  $x > 7$ .



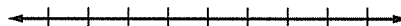
2. Graph all solutions to  $-2 \geq y$ .



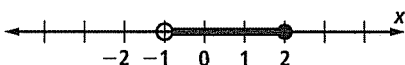
3. A number, when rounded up to the nearest integer, is 3.  
Graph all possibilities for the number before it was rounded.



4. Graph all solutions to  $2.5 \leq p < 4.25$ .



5. What inequality is graphed below?



\_\_\_\_\_

6. What inequality is graphed below?



\_\_\_\_\_

7. What is the mistake in the graph of  $-2 > d \geq -5$  shown below?

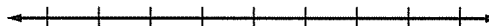


\_\_\_\_\_  
\_\_\_\_\_

8. Elevations in the United States range from 86 m below sea level in Death Valley, California to 6,194 m above sea level on Mount McKinley, Alaska.

a. Write an inequality to represent the range in elevations. \_\_\_\_\_

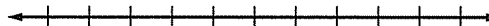
b. Graph the inequality on a number line.



9. Temperatures in the United States range from  $-79.8^\circ\text{F}$  (January 23, 1971) in northern Alaska to  $134^\circ\text{F}$  (July 10, 1913) in Death Valley, California.

a. Write an inequality to represent the range in temperatures. \_\_\_\_\_

b. Graph the inequality on a number line.

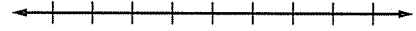


## 2-8B Lesson Master

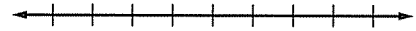
### REPRESENTATIONS

Objective J: Graph solutions to simple inequalities.

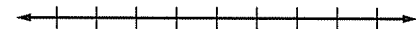
1. Graph all solutions for  $x \geq -3$ .



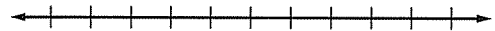
2. Graph all solutions for  $0 < y$ .



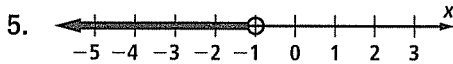
3. Rounded to the nearest integer, a number is 6. Graph all possibilities for the number before it was rounded.



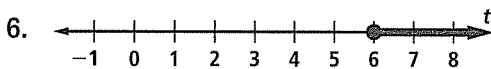
4. Graph all solutions to  $\$3.50 \geq d > \$2.25$ .



In 5–9, what inequality is graphed?



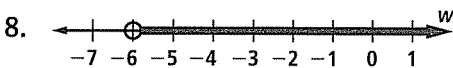
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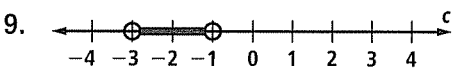
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\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_

**Multiple choice.** In 10 and 11, which choice has the same solutions as the given inequality?

10.  $-5 < d < -1$

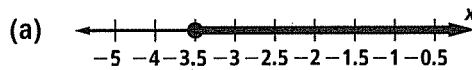
- A  $-1 > d < -5$     B  $-5 > d > -1$     C  $-1 > d > -5$     D  $-5 \leq d \leq -1$  \_\_\_\_\_

11.  $8 \geq x > -3$

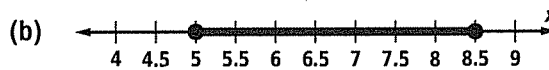
- A  $8 > x \geq -3$     B  $-3 < x \geq 8$     C  $-3 \leq x < 8$     D  $-3 < x \leq 8$  \_\_\_\_\_

**Matching.** For 12–15, choose the graph that matches the inequality.

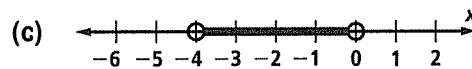
12.  $-4 > x$



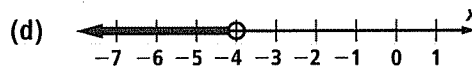
13.  $5 \leq x \leq 8.5$



14.  $x \geq -3.5$

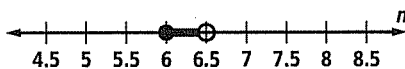


15.  $0 > x > -4$



In 16–18, true or false.

16. This is the graph of all possibilities for numbers rounded down to the integer 6.



17. This is the graph of all numbers greater than -2 and less than or equal to 3.



18. This is the graph of all numbers not equal to 5.

