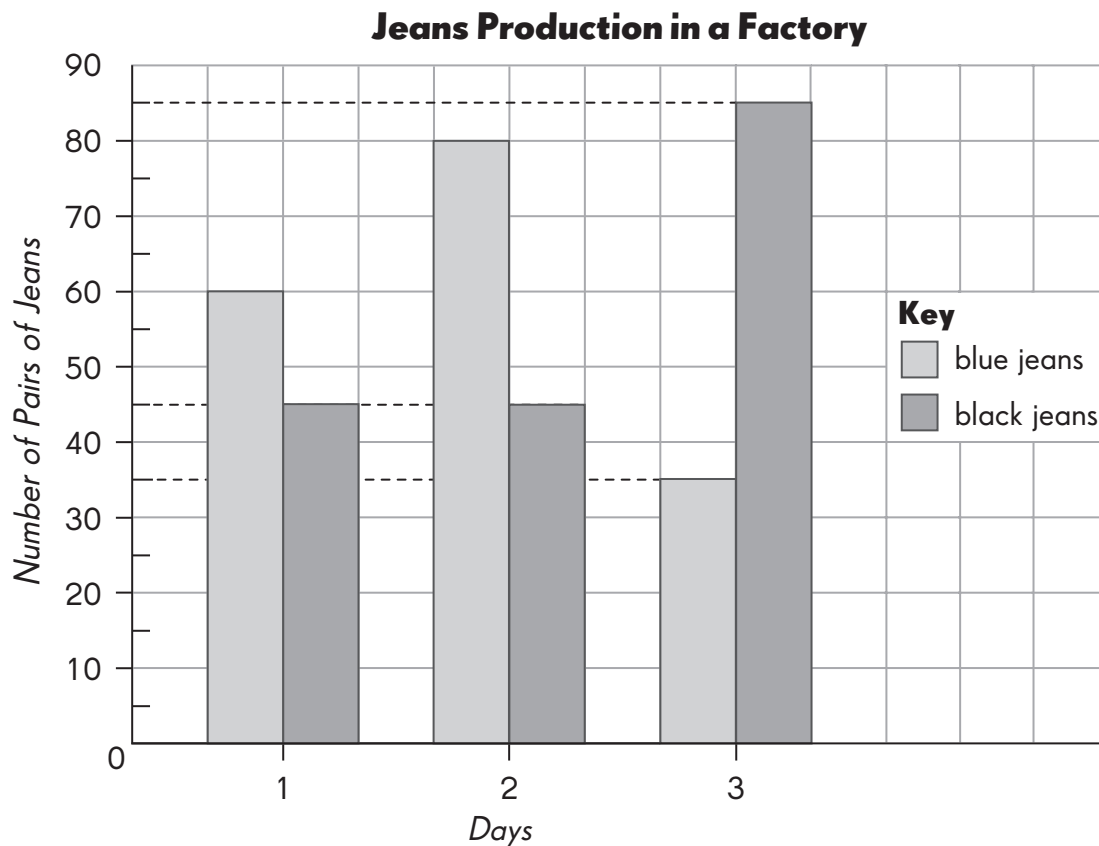


# Cumulative Review

## for Chapters 11 to 13

### Concepts and Skills

The double bar graph shows the number of pairs of black jeans and blue jeans produced in a factory in three days.

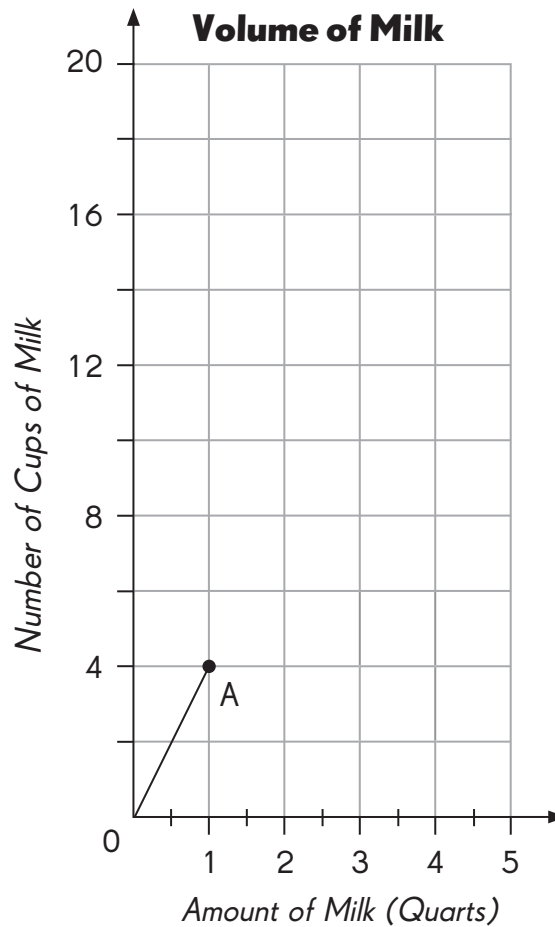


**Complete. Use the data in the graph on page 145.** (*Lesson 11.1*)

1. On day 2, \_\_\_\_\_ more pairs of blue jeans than black jeans are produced.
2. On day \_\_\_\_\_ and day \_\_\_\_\_, the same number of pairs of black jeans are produced.
3. The greatest number of blue jeans is produced on day \_\_\_\_\_.
4. On day 1, the difference between the number of pairs of blue jeans and black jeans produced is \_\_\_\_\_.
5. The total number of pairs of jeans produced in the three days is \_\_\_\_\_.
6. The ratio of the number of pairs of black jeans produced to the number of pairs of blue jeans produced on day 3 is \_\_\_\_\_.
7. Express the number of black jeans produced on day 1 as a fraction of the number of blue jeans produced on day 1. \_\_\_\_\_
8. Express the total number of blue jeans produced as a percent of the total number of jeans produced in the three days. \_\_\_\_\_

**Complete the graph using the data in the table.**  
**Then answer the questions.** (Lesson 11.2)

<b>Amount of Milk (Quarts)</b>	1	2	3	4
<b>Number of Cups of Milk</b>	4	8	12	16



9. What are the coordinates of point A? \_\_\_\_\_
10. How many quarts of milk are in 12 cups? \_\_\_\_\_
11. How many cups of milk are in  $3\frac{1}{2}$  quarts of milk? \_\_\_\_\_
12. How many cups of milk are in 5 quarts of milk? \_\_\_\_\_

**Make an organized list to find the number of combinations.** (Lesson 11.3)

Barry's Yogurt Shop sells frozen yogurt with a topping. A customer can pick one of three flavors: vanilla, strawberry, and blueberry. The customer can pick one of three toppings: nuts, raisins, and sprinkles.

- 13.** List all the possible combinations of yogurt flavor and topping.

Yogurt Flavor	Topping

- 14.** There are \_\_\_\_\_ combinations.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Find the number of combinations.** (*Lesson 11.3*)

Brenda has 1 red, 1 green and 1 gold bracelet. She has 4 pairs of earrings: stud, hoop, button, and dangling. She wants to find all the combinations of 1 bracelet and 1 pair of earrings that she can wear.

**15.** Draw a tree diagram to show the possible combinations.

**16.** Find the number of combinations by multiplication.

$$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

There are \_\_\_\_\_ combinations.

**Complete.** (Lesson 11.4)

A bag has 5 green toothbrushes and 7 yellow toothbrushes. Tim and Cathy each pick a toothbrush, and then return it to the bag. They do this for 20 times each. The table shows some of their results.

17. Complete the table.

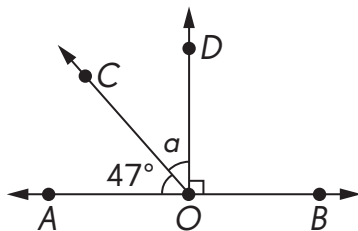
	Number of Times a Green Toothbrush is Picked	Number of Times a Yellow Toothbrush is Picked	Probability of Picking a Green Toothbrush	Probability of Picking a Yellow Toothbrush
Tim	12			
Cathy		9		

18. The theoretical probability of picking a yellow toothbrush is \_\_\_\_\_.

19. The experimental probability of picking a green toothbrush that Tim's results show is \_\_\_\_\_.

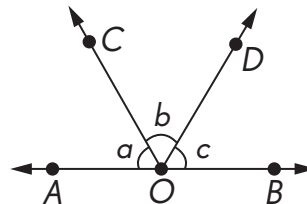
**Find the unknown angle measures.** (Lesson 12.1)

20.  $\overleftrightarrow{AB}$  is a line.



$m\angle a =$  \_\_\_\_\_

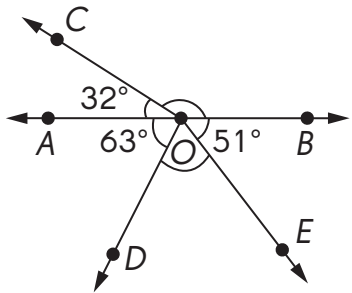
21.  $\overleftrightarrow{AB}$  is a line. The measures of  $\angle a$ ,  $\angle b$ , and  $\angle c$  are equal.



$m\angle a = m\angle b = m\angle c$   
 $=$  \_\_\_\_\_

**Find the unknown angle measures.** (Lessons 12.1 and 12.2)

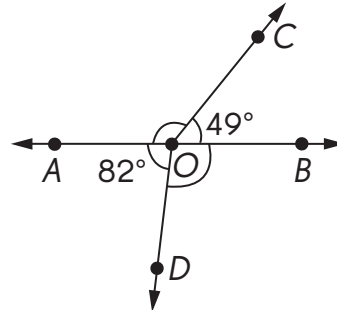
**22.**  $\overleftrightarrow{AB}$  is a line.



$m\angle BOC =$  \_\_\_\_\_

$m\angle DOE =$  \_\_\_\_\_

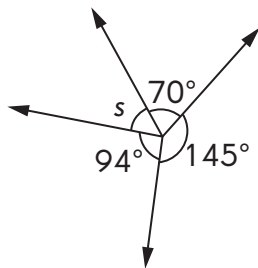
**23.**  $\overleftrightarrow{AB}$  is a line.



$m\angle AOC =$  \_\_\_\_\_

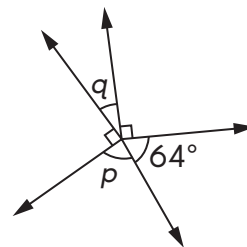
$m\angle DOB =$  \_\_\_\_\_

**24.**



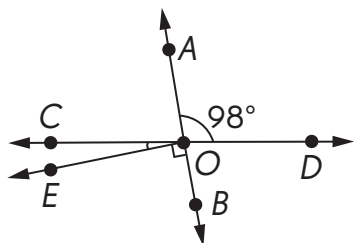
$m\angle s =$  \_\_\_\_\_

**25.**



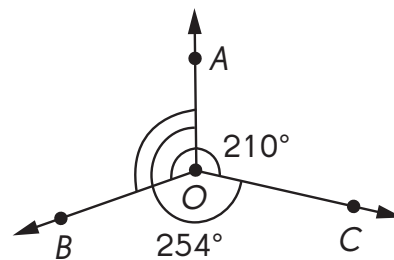
$m\angle p + m\angle q =$  \_\_\_\_\_

**26.**  $\overleftrightarrow{CD}$  is a line.



$m\angle COE =$  \_\_\_\_\_

**27.**

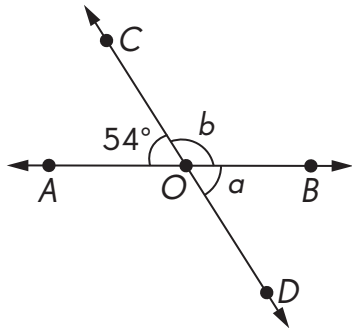


$m\angle AOB =$  \_\_\_\_\_

**Find the unknown angle measures.** (Lesson 12.3)

$\overleftrightarrow{AB}$ ,  $\overleftrightarrow{CD}$ , and  $\overleftrightarrow{EF}$  are lines.

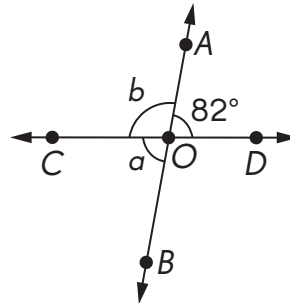
**28.**



$m\angle a = \underline{\hspace{2cm}}$

$m\angle b = \underline{\hspace{2cm}}$

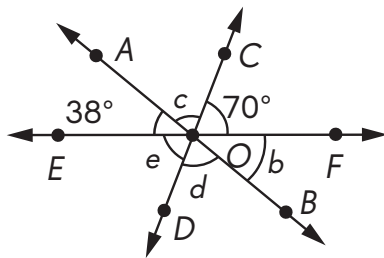
**29.**



$m\angle a = \underline{\hspace{2cm}}$

$m\angle b = \underline{\hspace{2cm}}$

**30.**



$m\angle b = \underline{\hspace{2cm}}$

$m\angle c = \underline{\hspace{2cm}}$

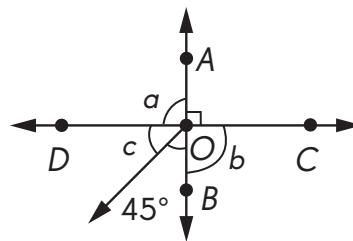
$m\angle d = \underline{\hspace{2cm}}$

$m\angle e = \underline{\hspace{2cm}}$

$m\angle b + m\angle d + m\angle e$

$= \underline{\hspace{2cm}}$

**31.**



$m\angle a = \underline{\hspace{2cm}}$

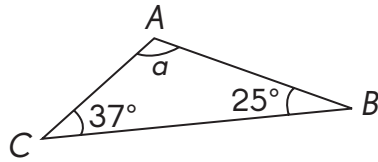
$m\angle b = \underline{\hspace{2cm}}$

$m\angle c = \underline{\hspace{2cm}}$



**Find the unknown angle measures. Then classify triangle  $ABC$  as an acute, obtuse, or right triangle.** (Lessons 13.1 to 13.3)

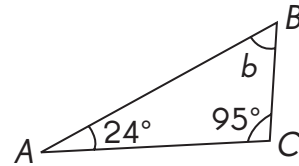
**32.**



$m\angle a =$  \_\_\_\_\_

\_\_\_\_\_ triangle

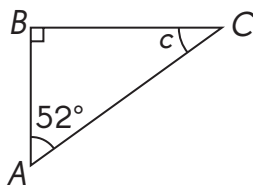
**33.**



$m\angle b =$  \_\_\_\_\_

\_\_\_\_\_ triangle

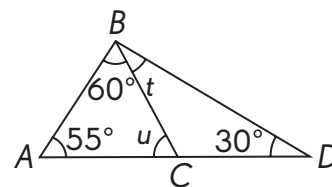
**34.**



$m\angle c =$  \_\_\_\_\_

\_\_\_\_\_ triangle

**35.**

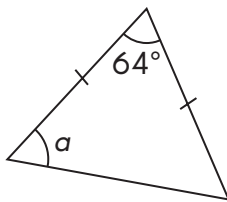


$m\angle u =$  \_\_\_\_\_

$m\angle t =$  \_\_\_\_\_

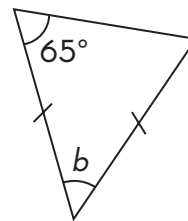
\_\_\_\_\_ triangle

**36.**



$m\angle a =$  \_\_\_\_\_

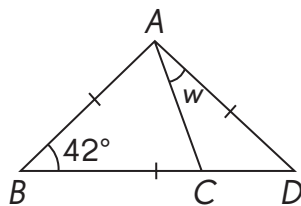
**37.**



$m\angle b =$  \_\_\_\_\_

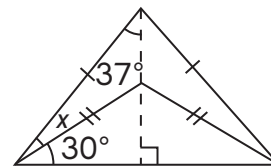
**38.**

$AB = BC = AD$



$m\angle w =$  \_\_\_\_\_

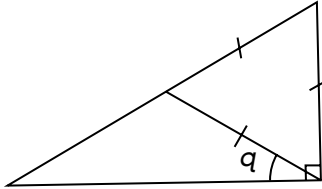
**39.**



$m\angle x =$  \_\_\_\_\_

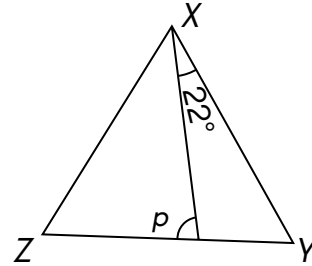
**Find the unknown angle measures.** (Lesson 13.3)

**40.**



$m\angle q = \underline{\hspace{2cm}}$

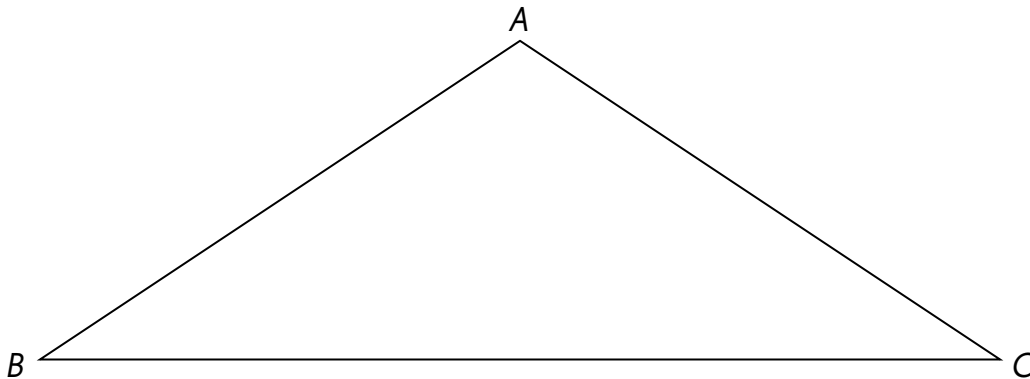
**41.**  $ZY = YX = XZ$



$m\angle p = \underline{\hspace{2cm}}$

**Measure the sides of the triangles in inches. Then fill in the blanks.**

(Lessons 13.1 and 13.4)



**42.**  $AB$  is \_\_\_\_\_ inches.

**43.**  $BC$  is \_\_\_\_\_ inches.

**44.**  $AC$  is \_\_\_\_\_ inches.

**45.**  $AB + BC > \underline{\hspace{2cm}}$

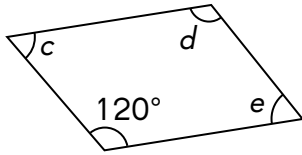
**46.**  $AB + AC > \underline{\hspace{2cm}}$

**47.**  $BC + AC > \underline{\hspace{2cm}}$

**48.** What kind of triangle is  $ABC$ ? \_\_\_\_\_

**Find the unknown angle measures in each parallelogram.** (Lesson 13.5)

49.

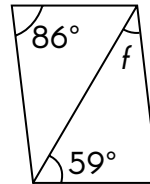


$m\angle c = \underline{\hspace{2cm}}$

$m\angle d = \underline{\hspace{2cm}}$

$m\angle e = \underline{\hspace{2cm}}$

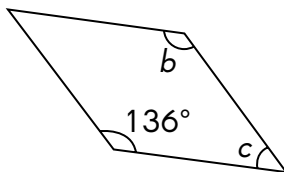
50.



$m\angle f = \underline{\hspace{2cm}}$

**Find the unknown angle measures in each rhombus.** (Lesson 13.5)

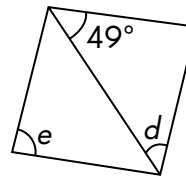
51.



$m\angle b = \underline{\hspace{2cm}}$

$m\angle c = \underline{\hspace{2cm}}$

52.

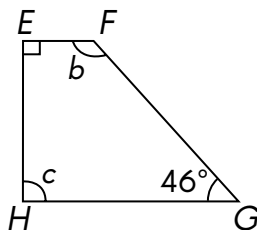


$m\angle d = \underline{\hspace{2cm}}$

$m\angle e = \underline{\hspace{2cm}}$

**Find the unknown angle measures in each trapezoid.** (Lesson 13.5)

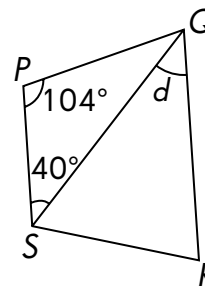
53. In  $EFGH$ ,  $\overline{EF} \parallel \overline{HG}$ .



$m\angle b = \underline{\hspace{2cm}}$

$m\angle c = \underline{\hspace{2cm}}$

54. In  $PQRS$ ,  $\overline{PS} \parallel \overline{QR}$ .

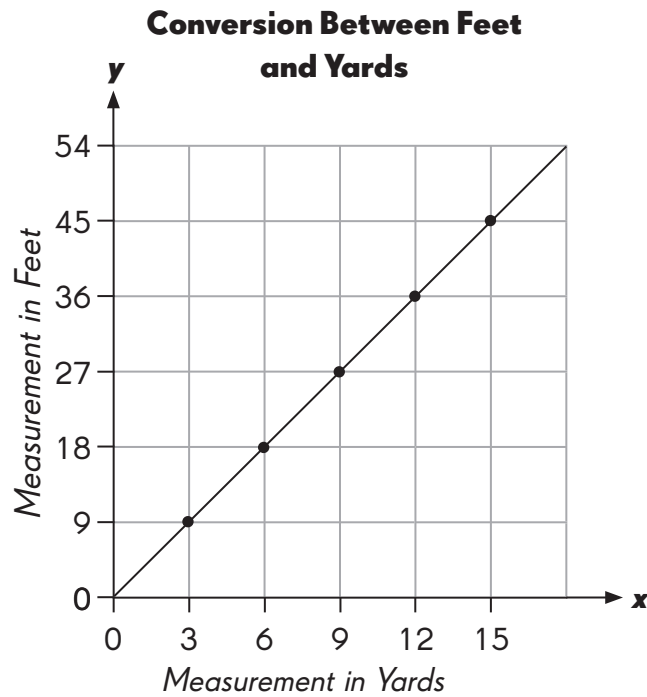


$m\angle d = \underline{\hspace{2cm}}$

## Problem Solving

### Solve. Show your work.

The graph shows a measurement in yards ( $x$ -axis) and its corresponding measurement in feet ( $y$ -axis).



55. The cost of 3 yards of fabric is \$24. What is the cost of 36 feet of fabric?

**Solve. Show your work.**

**56.** Each letter of the word JOURNAL is written on separate cards and put into a bag. First, one card is drawn. Then, the card is colored blue or yellow.

**a.** Draw a tree diagram to show the possible combinations of cards and colors.

**b.** What is the theoretical probability of picking a combination with a vowel?

**Solve. Show your work.**

- 57.** In the triangle  $ABC$ ,  $AB = 4$  centimeters,  $BC = 7$  centimeters and  $AC$  is longer than 8 centimeters. If the length of  $\overline{AC}$  is in whole centimeters, what are the possible lengths of  $\overline{AC}$ ?

- 58.**  $ABCD$  is a trapezoid and  $ABED$  is a parallelogram.  $\overline{AB} \parallel \overline{DC}$ ,  $\overline{AD} \parallel \overline{BE}$ , and  $BE = BC$ . Find the measure of  $\angle BCE$ .

