

## Ratios and Proportions

## 6.1

Write the ratio of the first measurement to the second measurement.

- diameter of a salad plate: 8 in.                      diameter of a dinner plate: 1 ft
- weight of a cupcake: 2 oz                              weight of a cake: 2 lb 2 oz
- garden container width: 2 ft 6 in.                      garden container length: 8 ft
- width of a canoe: 28 in.                              length of a canoe: 12 ft 6 in.
- height of a book: 11 in.                              height of a bookshelf: 3 ft 3 in.
- The perimeter of a rectangle is 280 cm. The ratio of the width to the length is 3 : 4. What is the length of the rectangle?
- The ratio of country albums to jazz albums in a music collection is 2 : 3. If the music collection has 45 albums, how many are country albums?
- The lengths of the sides of a triangle are in the extended ratio 3 : 6 : 8. The triangle's perimeter is 510 cm. What are the lengths of the sides?

**Algebra** Solve each proportion.

9.  $\frac{x}{4} = \frac{13}{52}$

10.  $\frac{x}{2x+1} = \frac{16}{40}$

11.  $\frac{9}{10} = \frac{9x}{70}$

12.  $\frac{2}{7} = \frac{b+1}{56}$

13.  $\frac{11}{y} = \frac{9}{27}$

14.  $\frac{3}{34} = \frac{m}{51}$

Use the proportion  $\frac{x}{z} = \frac{6}{5}$ . Complete each statement. Justify your answer.

15.  $\frac{x}{6} = \frac{\square}{\square}$

17.  $\frac{z}{x} = \frac{\square}{\square}$

18.  $5x = \square$

19. The measures of two consecutive angles in a parallelogram are in the ratio 4 : 11. What are the measures of the four angles of the parallelogram?

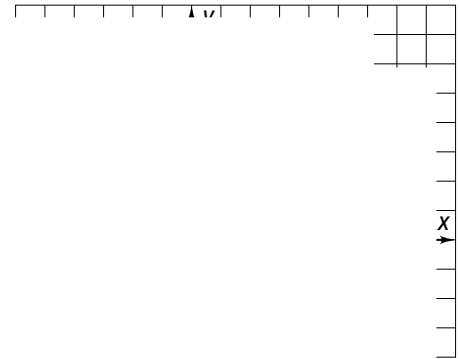
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**Coordinate Geometry** Use the graph. Write each ratio in simplest form.

20.  $\frac{AB}{AC}$

21.  $\frac{AE}{AC}$



large uniforms is 3 : 4 : 6.

- a. If there are 260 total uniforms to purchase, how many will be small?
  - b. How many of these uniforms will be medium?
  - c. How many of these uniforms will be large?
25. The measures of two complementary angles are in the ratio 2 : 3. What is the measure of the smaller angle?
26. The measures of two supplementary angles are in the ratio 4 : 11. What is the measure of the larger angle?
27. The means of a proportion are 4 and 17. List all possible pairs of positive integers that could be the extremes of the proportion.

e

---  $(x + 1) = 14$

---  $50 = 30$

31. **Writing** Explain why solving proportions is an important skill for solving geometry problems.

**What are the angle measures?**