Name Answers Date

7.1 – Ratios and Proportions

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

1) diameter of a salad plate: 8 in. diameter of a dinner plate: 1 ft. (12 in) $\frac{8}{12} = \frac{2}{3}$

2) garden container width: 2 ft 6 in. (30 in) garden container length: 8 ft. (96) $\frac{30}{96} = \frac{5}{16}$

3) width of a canoe: 28 in. length of a canoe: 12 ft. 6 in. (# 150) $\frac{28}{150} = \frac{14}{75}$

4) height of a book: 11 in. (11) height of a bookshelf: 3 ft. 3 in. $\frac{11}{39}$

5) 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?

$2(3x+4x)=280$
$14x=280$
$x=20$

length $= 4(20)$
$= 80$ cm

6) 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?

$2x+3x=45$
$5x=45$
$x=9$

country $= 2(9)$
$= 18$ albums

7) 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?

$3x+6x+8x=510$
$17x=510$
$x=30$

90 cm, 180 cm, + 240 cm

Solve each proportion. Show all work.

8) $\frac{x}{4}=\frac{13}{52}$

$x=1$

9) $\frac{9}{10}=\frac{9x}{70}$

$x=7$

10) $\frac{2}{7}=\frac{b+1}{56}$

$b+1=16$

$b=15$

11) $\frac{x}{2x+1}=\frac{16}{40}$

$5(x)=2(2x+1)$

$5x=4x+2$

$x=2$

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

12) $\frac{x}{6}=\frac{2}{5}$

13) $\frac{x+z}{z}=\frac{11}{5}$

14) $\frac{z}{x}=\frac{5}{6}$

15) $5x=6z$

16) 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?

$4x+11x=180$

$15x=180$

$x=12$

48°, 132°, 48°, 132°

17) A band director needs to purchase new uniforms. The ratio of small to medium to large uniforms is 3 : 4 : 6.

a. If there are 260 total uniforms to purchase, how many will be small?

$3x+4x+6x=260$

$13x=260$

$x=20$

60 small

b. How many of these uniforms will be medium?

80 medium

c. How many of these uniforms will be large?

120 large