LESSON Practice B

Ratio and Proportion 7-1

Use the graph for Exercises 1–3. Write a ratio expressing the slope of each line.

1. ℓ	

- **2.** *m* _____
- **3.** *n*
- 4. The ratio of the angle measures in a guadrilateral is 1:4:5:6. Find each angle measure.
- 5. The ratio of the side lengths in a rectangle is 5:2:5:2, and its area is 90 square feet. Find the side lengths.

For part of her homework, Celia measured the angles and the lengths of the sides of two triangles. She wrote down the ratios for angle measures and side lengths. Two of the ratios were 4:7:8 and 3:8:13.

6. When Celia got to school the next day, she couldn't remember which ratio was for angles and which was for sides. Tell which must be the ratio of the lengths of the sides. Explain your answer.

7. Find the measures of the angles of one of Celia's triangles.

Solve each proportion.



14. Given that 12a = 20b, find the ratio of a to b in simplest form.

15. Given that 34x = 51y, find the ratio x : y in simplest form.



Practice A	Practice B
751 Ratio and Proportion	74 Ratio and Proportion
Fill in the blanks to complete each definition.	Use the graph for Exercises 1–3. Write a ratio expressing
1. A proportion is an equation stating that two ratios are equal.	the slope of each line.
2. In a proportion, if $\frac{a}{b} = \frac{c}{d}$ and b and $d \neq 0$, then $ad = bc$. The products ad and bc	$1. \ell = \frac{7}{2}$
are called the cross products	2. m 2
3. A compares two numbers by division.	$\frac{5}{2}$
In Exercises 4–6, write two additional forms of each ratio.	A The ratio of the angle measures in a quadrilateral
$\frac{4}{3}$, $\frac{3}{5}$ to 5; $\frac{3}{5}$; $\frac{5}{5}$, $\frac{4}{5}$, $\frac{4}{3}$; $\frac{4}{3}$; $\frac{3}{5}$, $\frac{2}{7}$; $\frac{2}$	is 1 : 4 : 5 : 6. Find each angle measure. 22.5°; 90°; 112.5°; 135°
4. $\overline{5}$ 6. 2: 7 7	5. The ratio of the side lengths in a rectangle
The slope of a line is the ratio rise. Use the graph for Exercises 7–9. Write a ratio expressing the slope of each line.	Find the side lengths. 15 ft; 6 ft
$\frac{3}{2}$	For part of her homework, Celia measured the angles and the lengths of
$7. \ell \underline{2}$	the sides of two triangles. She wrote down the ratios for angle measures and side lengths. Two of the ratios were $4 \cdot 7 \cdot 8$ and $3 \cdot 8 \cdot 13$
8. m <u>4</u>	 When Celia got to school the next day, she couldn't remember which ratio was for
9. n	angles and which was for sides. Tell which must be the ratio of the lengths of the sides.
10. ABCD is a rectangle with side lengths as shown in the figure. $A = \frac{5}{B}$	4 : 7 : 8 must be the ratio of the lengths of the sides. The Triangle Inequality
Write the ratio of the side lengths in the form <i>a</i> : <i>b</i> : <i>a</i> : <i>b</i> .	Theorem states that no side of a triangle can be longer than the sum of the
$D = \frac{1}{5}C$	lengths of the other two sides. If the ratio of the side lengths was 3 : 8 : 13.
The perimeter of XYZ is 27 yards. Find the length $x = \frac{4x}{z}$	one side would be longer than the sum of the other two sides.
of the shortest side.	7. Find the measures of the angles of one of Celia's triangles. 22.5°; 60°; 97.5°
Ŭ YU Y	
Use cross products to solve each proportion.	Solve each proportion. 8 $28 = 42$ 9 $28 = -9$ 10 $3 = 7$
12. $\frac{a}{8} = \frac{10}{16}$ 13. $\frac{9}{b} = \frac{3}{2}$ 14. $\frac{1}{10} = \frac{c}{100}$	$3 \frac{7}{2} \frac{3}{24} \frac{3}{102} \frac{10}{10} \frac{4.5}{4.5} \frac{7}{105}$
$a = _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ $	$p = ___2$ $q = __113$ $r = _10.3$
Given that $\frac{a}{b} = \frac{c}{b}$ and none of the variables equals 0 fill in	11. $\frac{9}{5} = \frac{s}{25}$ 12. $\frac{50}{2t+4} = \frac{2t+4}{2}$ 13. $\frac{u+3}{8} = \frac{5}{u-3}$
the blanks in Exercises 15–17 to make equivalent statements.	$s = \underline{\pm 15}$ $t = \underline{3, -7}$ $u = \underline{\pm 7}$
15 ad = bc 16 $\frac{a}{d} = \frac{b}{d}$ 17 $\frac{b}{d} = \frac{d}{c}$	14. Given that $12a = 20b$, find the ratio of a to b in simplest form. 5 to 3
	15. Given that $34x = 51y$, find the ratio <i>x</i> : <i>y</i> in simplest form. 3:2
18. Given that $7x = 4y$, find the ratio $\frac{x}{y} : \frac{x}{y} = $	
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Practice C	Reteach
Practice C 741 Ratio and Proportion	Reteach Ratio and Proportion
Essen Practice C Factor and Proportion For Exercises 1–6, classify the polygon based on the information provided.	Reteach 71 Ratio and Proportion A ratio is a comparison of two numbers by division. Ratios can be written in
Esser Practice C Propertion Ratio and Proportion For Exercises 1–6, classify the polygon based on the information provided. equilateral triangle 1. The ratio of the side lengths of a triangle is 13 : 13 : 13. equilateral triangle	Reteach Ratio and Proportion A ratio is a comparison of two numbers by division. Ratios can be written in various forms.
Essent Practice C Main Ratio and Proportion For Exercises 1-6, classify the polygon based on the information provided. equilateral triangle 1. The ratio of the side lengths of a triangle is 13 : 13 : 13. equilateral triangle 2. The ratio of the side lengths of a quadrilateral is 7 : 7 : 15 : 15. kite	Reteach Ratio and Proportion A ratio is a comparison of two numbers by division. Ratios can be written in various forms. Ratios comparing x and y Ratios comparing 3 and 2 Y to y 2 to 2 Y to y 3
Esser Practice C For Exercises 1-6, classify the polygon based on the information provided. 1. The ratio of the side lengths of a triangle is 13 : 13 : 13. equilateral triangle 2. The ratio of the side lengths of a quadrilateral is 7 : 7 : 15 : 15. kite 3. The ratio of the side lengths of a quadrilateral is 4 : 4 : 4. rhombus 4. The ratio of the non-side measures in a triangle is 11 : 11 : 12 isosceles triangle	Reteach LESSON Ratio and Proportion A ratio is a comparison of two numbers by division. Ratios can be written in various forms. Ratios comparing x and y Ratios comparing 3 and 2 x to y x : y $\frac{X}{y}$, where $y \neq 0$ 3 to 2 3 : 2 $\frac{3}{2}$
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Practice C Easier Practice C Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"Co	ReteachTable Static and ProportionA ratio is a comparison of two numbers by division. Ratios can be written in various forms.Ratios comparing x and yRatios comparing 3 and 2 x to yx : y $\frac{x}{y}$, where $y \neq 0$ 3 to 23 : 2 $\frac{3}{2}$ Slope is a ratio that compares the rise, or change in x.Slope = rise $\frac{y_2 - y_1}{x_2 - x_1}$ Definition of slope
Practice C Ratio and Proportion For Exercises 1–6, classify the polygon based on the information provided. 1. The ratio of the side lengths of a triangle is 13 : 13 : 13. equilateral triangle 2. The ratio of the side lengths of a quadrilateral is 7 : 7 : 15 : 15. kite 3. The ratio of the side lengths of a quadrilateral is 4 : 4 : 4 : 4. the ratio of the angle measures in a triangle is 11 : 11 : 12. 5. The ratio of the angle measures in a quadrilateral is 2 : 6 : 3 : 6. parallelogram 6. The ratio of the angle measures in a quadrilateral is 2 : 2 : 2 : 2. rectangle Two rectangles have the same shape but different sizes. They both	ReteachTessonRatio and ProportionA ratio is a comparison of two numbers by division. Ratios can be written in various forms.Test colspan="2">Test colspan="2" Test
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