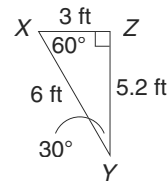
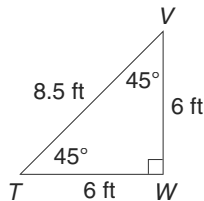
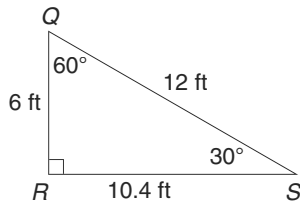


LESSON
5-5 **Practice B**
Similar Figures

1. Are any of these triangles similar?



2. A photo is 12 in. wide by 18 in. tall. If the width is scaled down to 9 inches, how tall should the similar photo be?

3. An isosceles triangle has a base of 20 cm and legs measuring 36 cm. How long are the legs of a similar triangle with base measuring 50 cm?

4. A picture of a school's mascot is 18 in. wide and 24 in. long. It is enlarged proportionally to banner size. If the width is enlarged to 63 in., what is the length of the banner?

5. Carol has a 24 cm \times 36 cm photo that she reduces to $\frac{3}{4}$ of its size. What are the dimensions of the new photo?

6. Erik is drawing a picture of his school's basketball court. The actual basketball court is 84 ft long and 50 ft wide. If Erik draws the court with a length of 21 in., what will be the width?

7. IMAX theaters have the world's largest screens. There are numerous IMAX theaters around the world. The Henry Ford Museum in Dearborn, Michigan hosts an IMAX theater with a 60 ft \times 84 ft screen. If a classroom projection screen were changed to be in direct proportion with the IMAX screen at the Henry Ford Museum, the dimensions would be 5 ft \times ____ ft.

LESSON 5-4 Puzzles, Twisters & Teasers

5-4 Climb the Ladder of Success!

Decide whether the pairs of ratios form a proportion. Circle the letter above your answer. Use the letters to solve the riddle.

- | | | |
|------------------------------------|-----|-----|
| 1. $\frac{7}{14} = \frac{14}{28}$ | (H) | E |
| 2. $\frac{2}{9} = \frac{6}{27}$ | (I) | A |
| 3. $\frac{3}{7} = \frac{6}{15}$ | N | G |
| 4. $\frac{15}{25} = \frac{9}{15}$ | (H) | R |
| 5. $\frac{12}{49} = \frac{4}{7}$ | L | (S) |
| 6. $\frac{30}{36} = \frac{15}{16}$ | T | (C) |
| 7. $\frac{7}{8} = \frac{35}{40}$ | (H) | U |
| 8. $\frac{6}{3} = \frac{18}{9}$ | (O) | Q |
| 9. $\frac{1}{4} = \frac{11}{44}$ | (O) | Y |
| 10. $\frac{5}{2} = \frac{15}{6}$ | (L) | P |
- proportional not proportional



Why did the boy bring a ladder to school?

Because he thought it was a

H I G H S C H O O L

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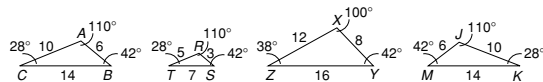
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Holt Mathematics

LESSON Practice A

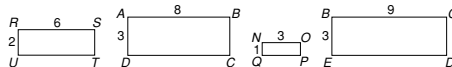
5-5 Similar Figures

1. Which triangles are similar to $\triangle ABC$?



$\triangle ABC \sim \triangle RST \sim \triangle JMK$

2. Which rectangles are similar to $RSTU$?



$NOPQ$ and $BCDE$

3. A room is 36 ft long and 18 ft wide. What is the length to width ratio? $\frac{2}{1}$
4. An isosceles triangle has a base of 8 inches and legs measuring 12 inches. How wide is the base of a similar triangle with legs measuring 36 inches? 24 in.
5. A photo that is 8 in. wide and 12 in. long is enlarged to a poster. If the width is enlarged to 24 in., what is the length of the poster? 36 in.
6. Clyde makes a copy of an 8 in. \times 10 in. photo, reducing it to $\frac{3}{4}$ of its size. What are the dimensions of the new photo? 6 in. \times 7.5 in.
7. The White House, built 1792, is the oldest federal building in Washington, D.C. The building has undergone extensive remodeling over the years. The main building is four stories high and is about 170 ft long by 85 ft wide. If a replica of the White House were made with a length of 4 ft, what would be the width of the replica? 2 ft

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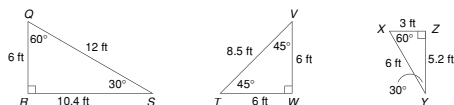
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LESSON Practice B

5-5 Similar Figures

1. Are any of these triangles similar?



$\triangle QRS \sim \triangle XYZ$

2. A photo is 12 in. wide by 18 in. tall. If the width is scaled down to 9 inches, how tall should the similar photo be? 13.5 in.
3. An isosceles triangle has a base of 20 cm and legs measuring 36 cm. How long are the legs of a similar triangle with base measuring 50 cm? 90 cm
4. A picture of a school's mascot is 18 in. wide and 24 in. long. It is enlarged proportionally to banner size. If the width is enlarged to 63 in., what is the length of the banner? 84 in.
5. Carol has a 24 cm \times 36 cm photo that she reduces to $\frac{3}{4}$ of its size. What are the dimensions of the new photo? 18 cm \times 27 cm
6. Erik is drawing a picture of his school's basketball court. The actual basketball court is 84 ft long and 50 ft wide. If Erik draws the court with a length of 21 in., what will be the width? 12.5 in.
7. IMAX theaters have the world's largest screens. There are numerous IMAX theaters around the world. The Henry Ford Museum in Dearborn, Michigan hosts an IMAX theater with a 60 ft \times 84 ft screen. If a classroom projection screen were changed to be in direct proportion with the IMAX screen at the Henry Ford Museum, the dimensions would be 5 ft \times 7 ft.

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LESSON Practice C

5-5 Similar Figures

The figures in each pair are similar. Find the scale factor to solve for x .

1. $x = 18$
2. $x = 63$
3. $x = 30$
4. $x = 40$
5. In $\triangle XYZ$, $XY = 27$ cm, $YZ = 15$ cm, and $XZ = 21$ cm. If $\triangle ABC \sim \triangle XYZ$ and the ratio of the corresponding sides of the triangles is 2 to 3, find the lengths of AB , BC , and AC . $AB = 18$ cm, $BC = 10$ cm, $AC = 14$ cm
6. A house measures 90 ft long by 66 ft wide. If the blueprints indicated 1 cm = 3 ft, what are the dimensions of the house on the blueprints? 30 cm long by 22 cm wide
7. M. C. Escher, a Dutch painter, explored mathematical symmetry through many of his works. In 1931, he painted *Carruba Tree*. The picture is 32 cm by 24.2 cm. If a replica were made reducing it to $\frac{1}{4}$ of its size, what would the dimensions of the replica be? 8 cm \times 6.05 cm
8. The Golden Gate Bridge in California is 8,976 ft long and 90 ft wide. What would be the length of a reproduction of the bridge if the width were 2 ft? Round the answer to the nearest tenth of a unit. 199.5 ft

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