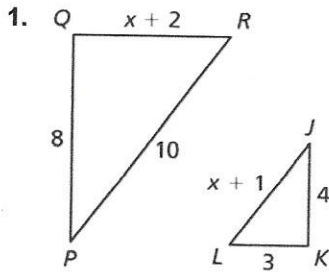


LESSON
11-3

Corresponding Parts of Similar Figures

Practice and Problem Solving: A/B

In Exercises 1 and 2, find the value of x that makes $\triangle PQR \sim \triangle JKL$



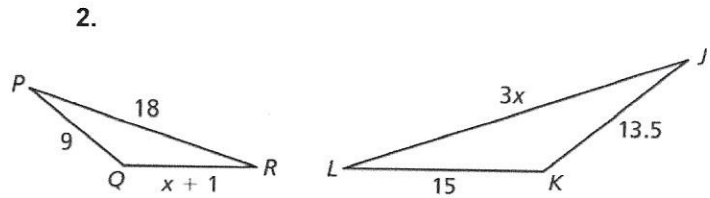
$$\frac{x+2}{3} = \frac{8}{4}$$

$$4(x+2) = 24$$

$$4x+8 = 24$$

$$4x = 16$$

$$x = 4$$

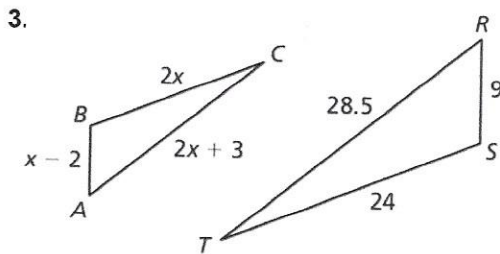


$$\frac{18}{3x} = \frac{9}{13.5}$$

$$27x = 243$$

$$x = 9$$

In Exercises 3 and 4, find the value of x that makes $\triangle ABC \sim \triangle RST$



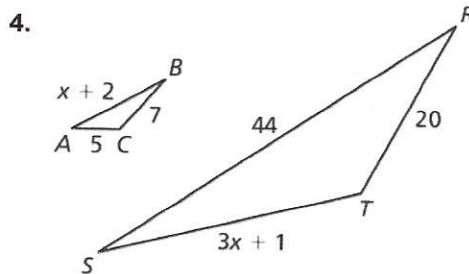
$$\frac{x-2}{9} = \frac{2x}{24}$$

$$24(x-2) = 18x$$

$$24x - 48 = 18x$$

$$6x = 48$$

$$x = 8$$



$$\frac{x+2}{44} = \frac{5}{20}$$

$$20(x+2) = 220$$

$$20x + 40 = 220$$

$$20x = 180$$

$$x = 9$$

5. 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?

$$\frac{12}{18} = \frac{9}{x}$$

$$12x = 162$$

$$x = 13.5$$

6. 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?

$$\frac{20}{36} = \frac{50}{x}$$

$$20x = 1800$$

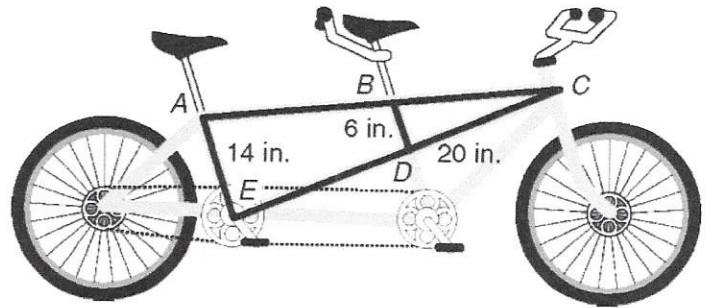
$$x = 90$$

7. In the diagram of the tandem bike, $\overline{AE} \parallel \overline{BD}$. Find CE to the nearest tenth. Show your work.

$$\frac{6}{14} = \frac{20}{x}$$

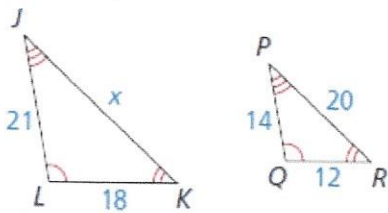
$$6x = 280$$

$$x = 46.7$$



In Exercises 8 – 11, the polygons are similar. Find the value of x.

8. $\triangle LJK \sim \triangle QPR$

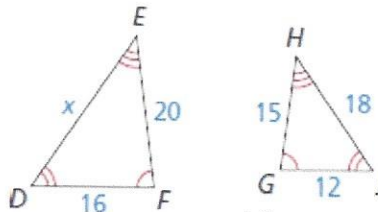


$$\frac{x}{20} = \frac{21}{14}$$

$$14x = 420$$

$$x = 30$$

9. $\triangle DEF \sim \triangle JHG$

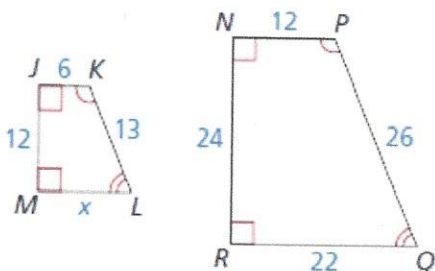


$$\frac{x}{18} = \frac{16}{12}$$

$$12x = 288$$

$$x = 24$$

10. $KLMJ \sim PQRN$

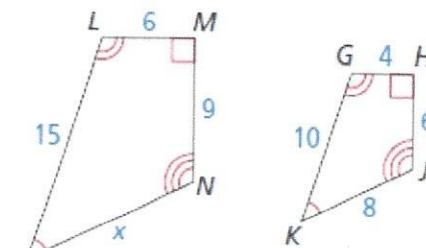


$$\frac{x}{22} = \frac{12}{24}$$

$$24x = 264$$

$$x = 11$$

11. $PLMN \sim KGHJ$



$$\frac{x}{8} = \frac{15}{10}$$

$$10x = 120$$

$$x = 12$$

5. Figure ABCD is similar to figure MNKL.
Write a proportion that contains BC and KL.

$$\frac{BC}{MK} = \frac{CD}{KL}$$

6. $\triangle DEF$ is similar to $\triangle STU$. Write a proportion that contains ST and SU.

$$\frac{ST}{DE} = \frac{SU}{DF}$$

11. $\triangle QRS$ maps to $\triangle XYZ$ with the transformation $(x, y) \rightarrow (6x, 6y)$. If $QS = 7$, what is the length of XZ?

42

14. Which transformations will not produce similar figures? Select all that apply and explain your choices.

- A. $(x, y) \rightarrow (x - 4, y) \rightarrow (-x, -y) \rightarrow (8x, 8y)$
- B. $(x, y) \rightarrow (x + 1, y + 1) \rightarrow \cancel{(3x, 2y)} \rightarrow (-x, -y)$
- C. $(x, y) \rightarrow (5x, 5y) \rightarrow (x, -y) \rightarrow (x + 3, y - 3)$
- D. $(x, y) \rightarrow \cancel{(x, 2y)} \rightarrow (x + 6, y - 2) \rightarrow \cancel{(2x, y)}$
- E. $(x, y) \rightarrow \cancel{(x, 3y)} \rightarrow (2x, y) \rightarrow (x - 3, y - 2)$

15. The figures in the picture are similar to each other.
Find the value of x.

$$\frac{x-3}{x+1} = \frac{3}{6}$$

$$6(x-3) = 3(x+1)$$

$$\begin{aligned} 6x - 18 &= 3x + 3 \\ 3x &= 21 \\ x &= 7 \end{aligned}$$

