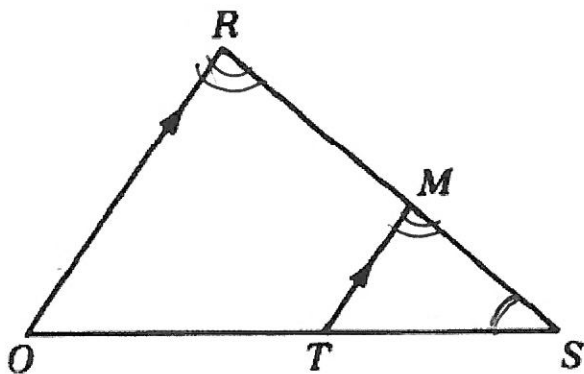


Name: _____

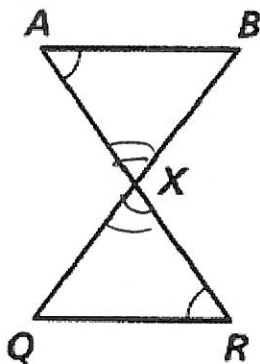
8.2 Practice Problems

1. State which similarity shortcut proves the two triangles are ~~congruent~~ ^{similar} and write a similarity statement.



AA
 $\triangle MTS \sim \triangle ROS$

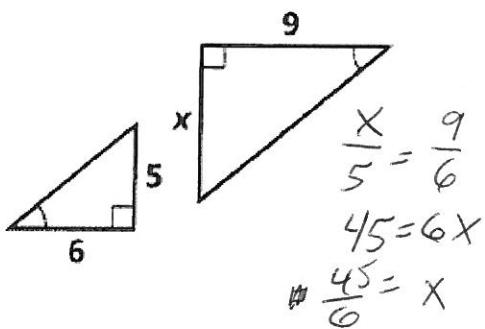
2. State which similarity shortcut proves the two triangles are ~~congruent~~ ^{similar} and write a similarity statement.



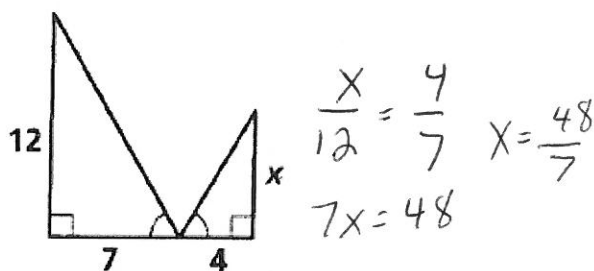
AA
 $\triangle AXB \sim \triangle RXQ$

For 3-6, find the value of x.

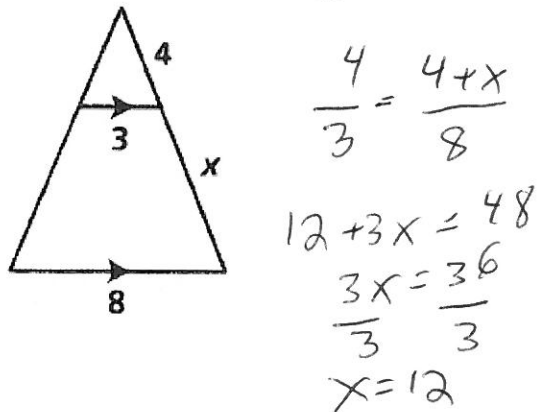
3.



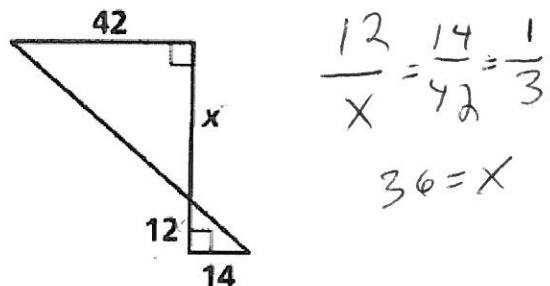
4.



5.

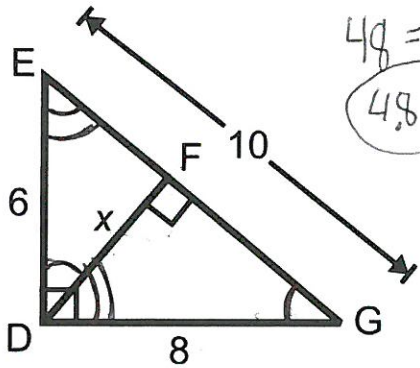


6.



7. Solve for x

$$\frac{x}{8} = \frac{6}{10}$$



Handwritten work for problem 7:

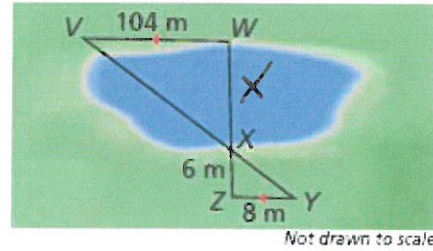
$$\frac{x}{8} = \frac{6}{10}$$

$$4x = 10 \times 6$$

$$4x = 60$$

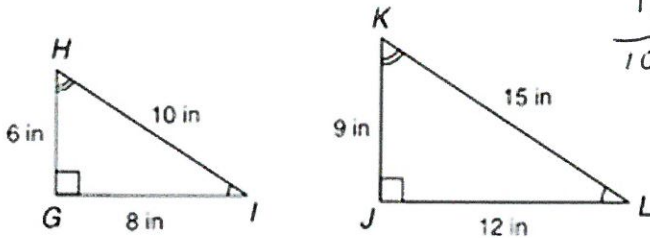
$$x = 15$$

8. **MODELING WITH MATHEMATICS** You can measure the width of the lake using a surveying technique, as shown in the diagram. Find the width of the lake, WX. Justify your answer.



Not drawn to scale

9. Find the ratio Area HGI : Area KJL.



Handwritten work for problem 9:

$$\frac{15}{10} = \frac{3}{2}$$

$$\left(\frac{3}{2}\right)^2 = \frac{9}{4}$$

Handwritten work for problem 8:

$$\frac{6}{x} = \frac{8}{104}$$

$$8x = 624$$

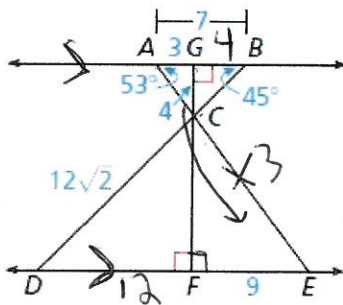
$$x = 78$$

10. Given the perimeter of triangle DEF is 3 longer than the perimeter of triangle ABC, how many times larger is the area of triangle DEF to triangle ABC.

Handwritten work for problem 10:

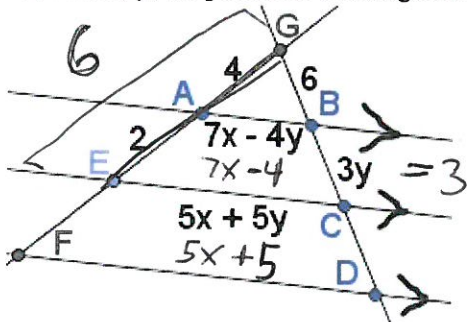
$$3^2 = 9$$

In Exercises 11–18, use the diagram to copy and complete the statement.



- 11. $\triangle CAG \sim \triangle CEF$
- 12. $\triangle DCF \sim \triangle BCG$
- 13. $\triangle ACB \sim \triangle ECD$
- 14. $m\angle ECF = m\angle GCA$
- 15. $m\angle ECD = m\angle ACB$
- 16. $CF = 4 \times 3 = 12$
- 17. $BC = \frac{4 \times 2}{3} = \frac{8}{3}$
- 18. $DE = 21$

19. Find x, y, the perimeter of triangle ABG and the ratio Area ABG : Area ECG.



Handwritten work for problem 19:

$$3y = 3$$

$$y = 1$$

$$\frac{3(7x - 4)}{2} = 5x + 5$$

$$\frac{21x - 12}{2} = 5x + 5$$

$$21x - 12 = 10x + 10$$

$$11x = 22$$

$$x = 2$$

Perimeter of $\triangle ABG = 20$

Perimeter of $\triangle ECG = 30$

Ratio of Perimeters = $30:20 = 3:2$

Area ratio = $3^2:2^2 = 9:4$