

**Lesson Summary**

Square roots of some non-perfect squares can be simplified by using the factors of the number. Any perfect square factors of a number can be simplified.

For example:

$$\begin{aligned}\sqrt{72} &= \sqrt{36 \times 2} \\ &= \sqrt{36} \times \sqrt{2} \\ &= \sqrt{6^2} \times \sqrt{2} \\ &= 6 \times \sqrt{2} \\ &= 6\sqrt{2}\end{aligned}$$

**Problem Set**

Simplify each of the square roots in Problems 1–5 as much as possible.

1.  $\sqrt{98}$

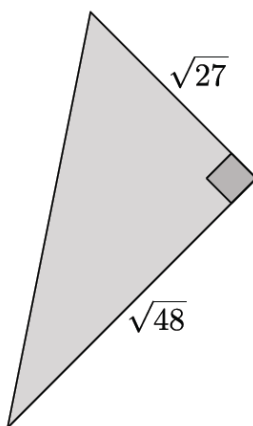
2.  $\sqrt{54}$

3.  $\sqrt{144}$

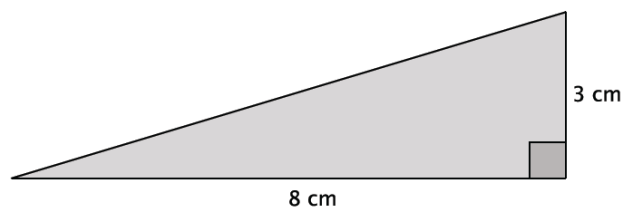
4.  $\sqrt{512}$

5.  $\sqrt{756}$

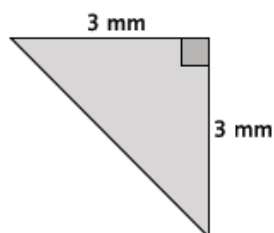
6. What is the length of the unknown side of the right triangle? Simplify your answer, if possible.



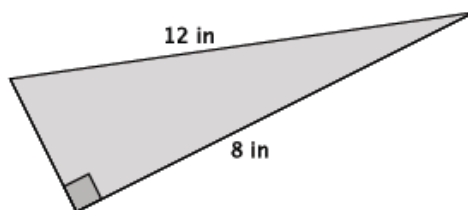
7. What is the length of the unknown side of the right triangle? Simplify your answer, if possible.



8. What is the length of the unknown side of the right triangle? Simplify your answer, if possible.



9. What is the length of the unknown side of the right triangle? Simplify your answer, if possible.



10. Josue simplified  $\sqrt{450}$  as  $15\sqrt{2}$ . Is he correct? Explain why or why not.
11. Tiah was absent from school the day that you learned how to simplify a square root. Using  $\sqrt{360}$ , write Tiah an explanation for simplifying square roots.