Name:_____ 8.1 Radicals & Pythagorean & Converse Date:_____ Period:____

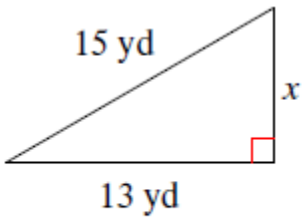
1-10 Simply the expressions by leaving your answer in reduced radical form.

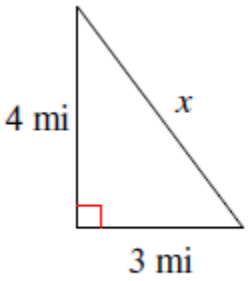
1. $\sqrt{24}$ **2.** $-\sqrt{72}$ **3.** $\sqrt{6}\sqrt{8}$ **4.** $-4\sqrt{8}+2\sqrt{8}$

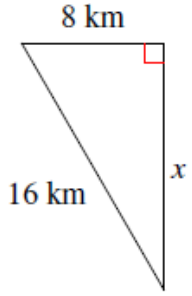
5. $2\sqrt{12}$ **6.** $\dfrac{3}{\sqrt{6}}$ **7.** $\dfrac{8}{\sqrt{12}}$ **8.** $\dfrac{\sqrt{4}}{4\sqrt{5}}$

9. $\sqrt{4}-\sqrt{16}+\sqrt{2}-6\sqrt{2}$ **10.** $5\sqrt{7}+\sqrt{3}-8\sqrt{7}$

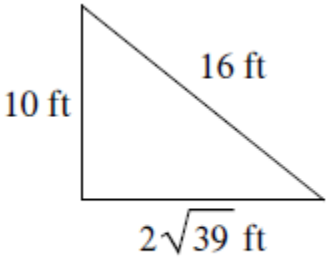
11. Find the missing side of each triangle. Leave your answer in reduced radical form.

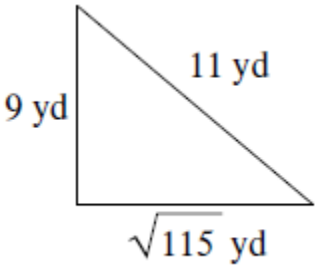






12. State if each triangle is a right triangle. Then find the perimeter of the triangle in reduced radical form.





13. State if the three side lengths form a right triangle.

$6,\ 2\sqrt{22},\ 17$ $4.8,\ 28.6,\ 29$

Questions 14-17 round your answers to the nearest hundreth if necessary.

14. Tina built a triangular sign with side lengths of 73 inches, 55 inches, and 4 feet. Is the sign a right triangle? Why or why not?

15. Two joggers run 8 miles north and then 5 miles west. What is the shortest distance they must travel to return to their starting point?

16. Oscar's dog house is shaped like a tent. The slanted sides are both 5 feet long and the bottom of the house is 6 feet across. What is the height of his dog house, in feet, at its tallest point?

17. A suitcase measures 24 inches long and the diagonal is 30 inches long. How much material is needed to cover one side of the suitcase?