Unit 8 Review   Period ____ Name _____
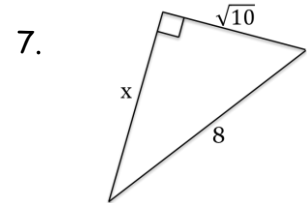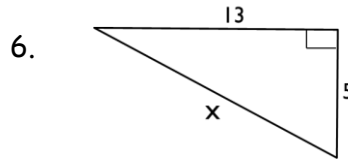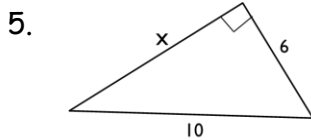
Simplify each of the following.
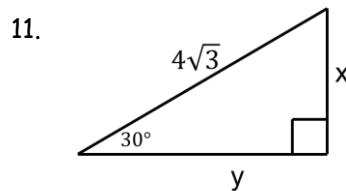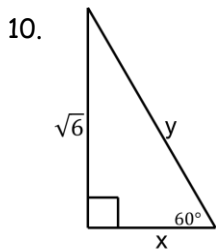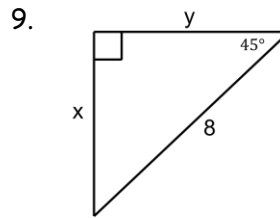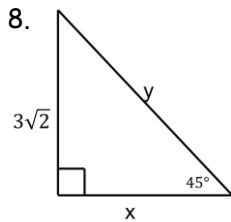
1. $\sqrt{60}$

2. $\sqrt{5} \times \sqrt{15}$

3. $\dfrac{9}{\sqrt{3}}$

4. $\dfrac{5\sqrt{2}}{\sqrt{2}}$

Determine the length of the missing side by using the Pythagorean Theorem. Simplify your answers.

5.

6.

7.

Determine the length of the missing values by using the properties of special right triangles. Show all your work an simplify your answers.
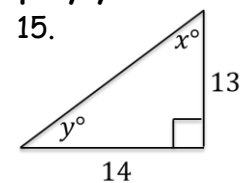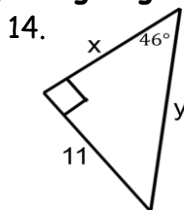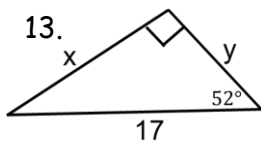
8.

9.

10.

11.

12. **Draw and label a diagram that represents following functions. Do not solve any of them.**

a.) $\sin 56° = \dfrac{12}{x}$

b.) $\cos 49° = \dfrac{y}{7}$

c.) $\tan 37° = \dfrac{x}{y}$

Solve for the values of x and y by using trigonometric functions. Simplify your answers.

13.

14.

15.

Draw and label a right triangle diagram then solve for the desired measurement.

16. When the sun's angle of elevation is $57°$, a building casts a shadow 21 m long. How high is the building?

17. The angle of depression from a balloon on a 75-foot string to a person on the ground is $36°$. How high is the balloon?

18. Jeremy has a skate board ramp set $30°$ from the ground. If the height of the platform is 8 feet from the ground, how long is the ramp up to the top of the platform?

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

Solve for the missing measurement(s). You may use a method of your choice but must show your work.

20.

21.

22.

23.

24.

25.