Name:_____Per:_____

Choose the correct term to complete each sentence.

1. Any quantity that has magnitude and direction is called a(n) __?__.

2. The __?__ is the angle formed by a horizontal line and the line of sight to an object above that horizontal line.

3. The __?__ of $\angle A$ is $\dfrac{\text{leg adjacent } \angle A}{\text{hypotenuse}}$.

4. The __?__ of $\angle A$ is $\dfrac{\text{leg opposite } \angle A}{\text{hypotenuse}}$.

5. An equation that is true for all allowed values of the variable is called a(n) __?__.

6. The sum of two vectors is the __?__.

7. A set of three nonzero whole numbers that satisfy the equation $a^2 + b^2 = c^2$ form a(n) __?__.

Find the value of each variable. If your answer is not an integer, leave it in simplest radical form.

8.

9.

10.

Find the value of each variable. If your answer is not an integer, leave it in simplest radical form.
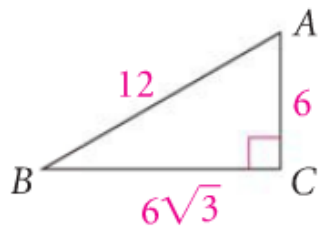
11.

12.

13.
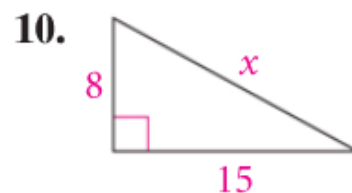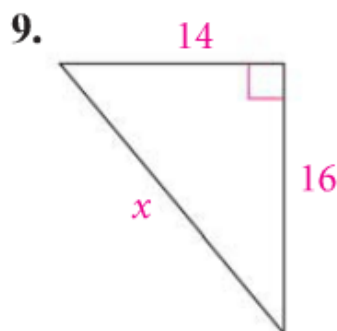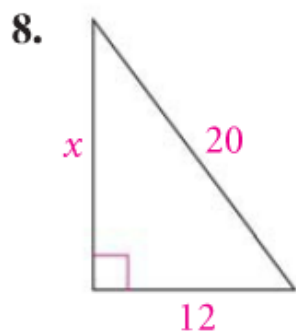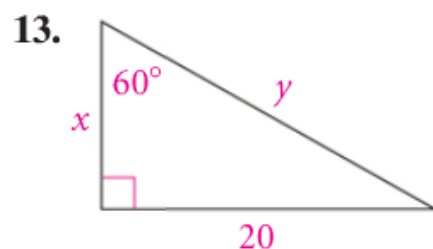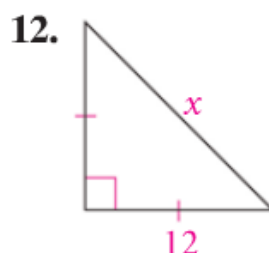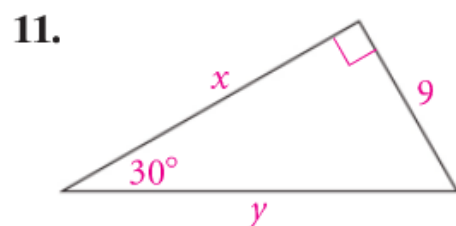
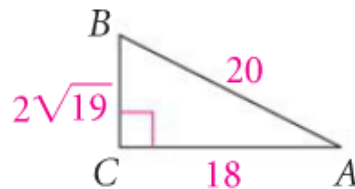**Find each missing value to the nearest whole number.**

14. $\tan \blacksquare° = 0.9$

15. $\sin 17° = \dfrac{\blacksquare}{7}$

16. $\tan 27° = \dfrac{1}{\blacksquare}$

17. $\cos \blacksquare° = 0.39$

18. $\sin \blacksquare° = 0.39$

19. $\sin \blacksquare° = \dfrac{2}{3}$

20. $\tan 76° = \dfrac{\blacksquare}{3}$

21. $\cos 83° = \dfrac{1}{\blacksquare}$

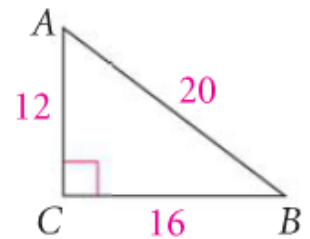**Express sin A, cos A, and tan A as ratios.**
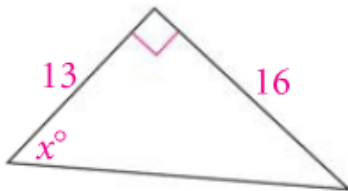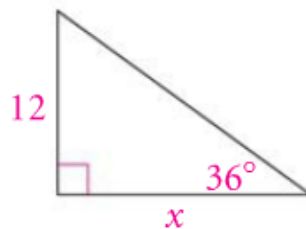
22.

23.

24.

Find the value of x. Round lengths of segments to the nearest tenth. Round angle measures to the nearest degree.
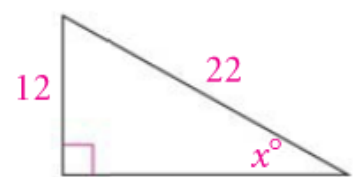
25.

26.

27.

28. Surveying A surveyor is 305 ft from the base of the new courthouse. Her angle measuring device is 5 ft above the ground. The angle of elevation to the top of the courthouse is 42°. Find the height of the courthouse to the nearest foot.

29. Indirect Measurement Linda is flying a kite. She lets out 45 yd of string and anchors it to the ground. She determines that the angle of elevation of the kite is 58°. What is the height of the kite from the ground?