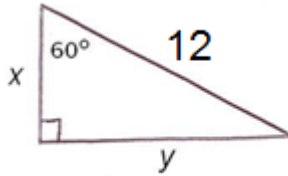


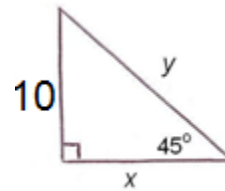
Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

**DIRECTIONS:** For #1-6, find the missing values. Write exact answers, using radicals when necessary, in the provided blanks. (1 pt each- 15 total pts)

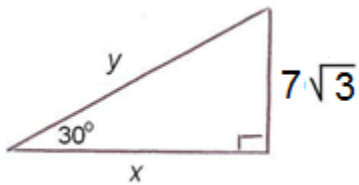
1.  $x = 6$      $y = 6\sqrt{3}$



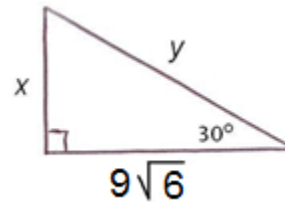
2.  $x = 10$      $y = 10\sqrt{2}$



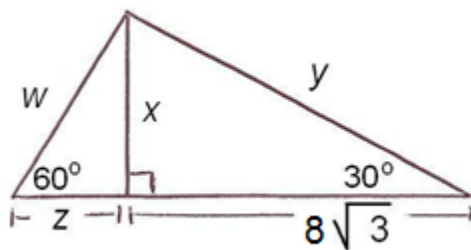
3.  $x = 21$      $y = 14\sqrt{3}$



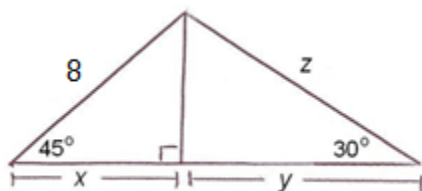
4.  $x = 9\sqrt{2}$      $y = 18\sqrt{2}$



5.  $w = \frac{16\sqrt{3}}{3}$      $x = 8$      $y = 16$      $z = \frac{8\sqrt{3}}{3}$

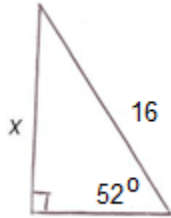


6.  $x = 4\sqrt{2}$      $y = 4\sqrt{6}$      $z = 8\sqrt{2}$

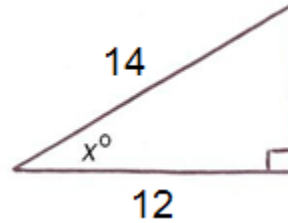


**DIRECTIONS:** For #7-12, use a table of trigonometric ratios or your calculator to determine the missing lengths to the **nearest tenth** or missing angles to the **nearest degree**. Show work (at a minimum, the initial ratio setup). (3 pts each- 21 total pts)

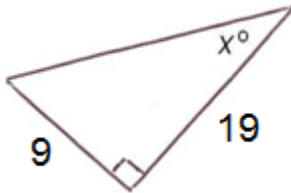
7.  $x = 12.6$



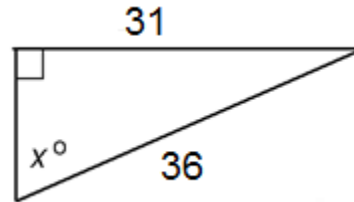
8.  $x = 31$



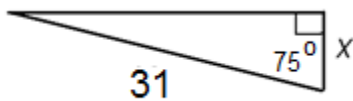
9.  $x = 25$



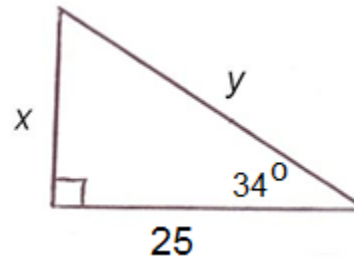
10.  $x = 59$



11.  $x = 8.0$

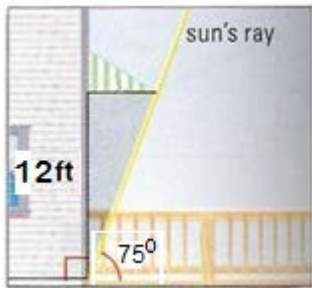


12.  $x = 16.9$     $y = 30.2$



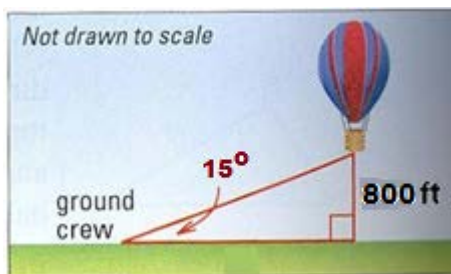
**DIRECTIONS:** For #13-14, use trigonometry to solve the word problems. Show work (3 pts each-6 total pts)

- 13.** Your family room has a sliding glass door with a southern exposure. You want to buy an awning for the door that will be just long enough to keep the sun out when it is at its highest point in the sky. The angle of elevation of the sun at this point is  $75^\circ$ , and the height of the door is 12 feet. How far (to the nearest tenth of a foot) should the overhang extend?



**3.2 feet**

- 14.** The ground crew for a hot-air balloon can see the balloon in the sky at an angle of elevation of  $15^\circ$ . The pilot radios to the crew that the hot-air balloon is 800 feet above the ground. The ground crew is observing the balloon through binoculars. What is the distance (to the nearest foot) of the balloon from the ground crew (how far does the crew have to look to see the balloon)?



**3091 feet**