Right Triangles Test Review

Find the missing side. Leave your answers in simplest radical form.

1)

$\sqrt{11}$ ft

$\sqrt{11}$ ft

2)

10 in

12 in
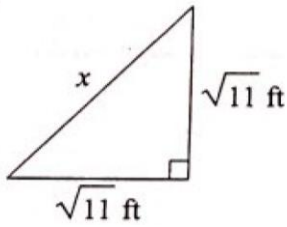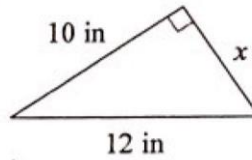
Determine if the 3 sides form a right, acute, or obtuse triangle.
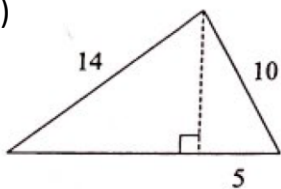
3) 10 km, 6 km, $2\sqrt{34}$ km

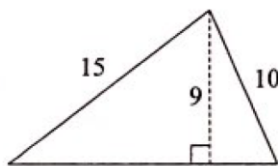4) $\sqrt{127}$ yd, $\sqrt{17}$ yd, 12 yd

5) 9, $2\sqrt{22}$, 13

6) $\sqrt{7}$, $\sqrt{11}$, 4

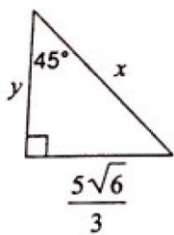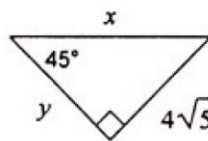Find the area of each triangle. Round your answer to the tenths place.

7)

14   10

5

8)

15   10
    9

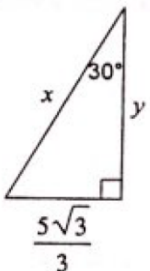Find the value of the variables. Express your answers in simplest radical form.

9)

45°
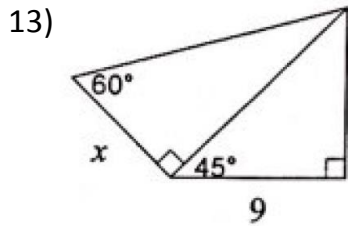y   x

$\dfrac{5\sqrt{6}}{3}$

10)

x
45°
y $4\sqrt{5}$

11)

30°
x   y

$\dfrac{5\sqrt{3}}{3}$

12)

y
$\dfrac{9\sqrt{3}}{2}$
30°   x

13)

14)
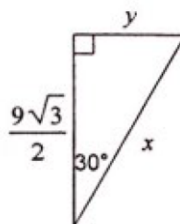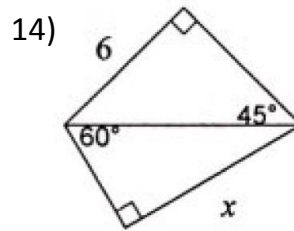
Find the value of the variable. For your final answers, round angles to the nearest degree and sides to the tenths place.

15)

16)

17)

18)

19)

20)
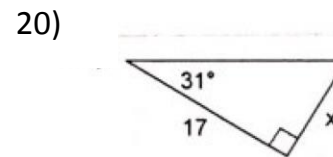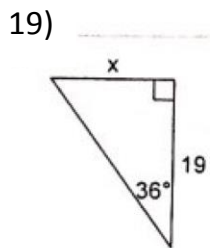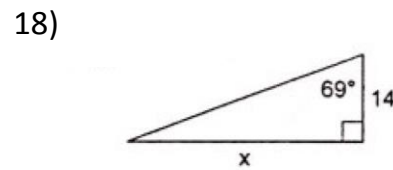
Find the value of each trigonometric ratio.

21) tanC

22) sin(C)

Find the area of each triangle. Round your final answer to the hundredths place.

23)

24)

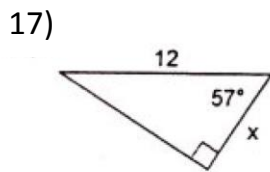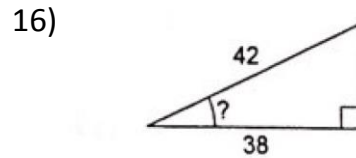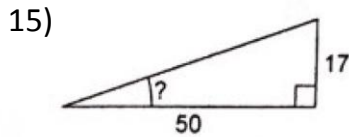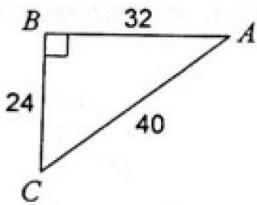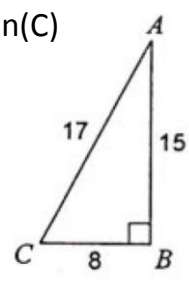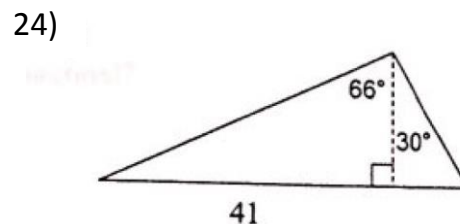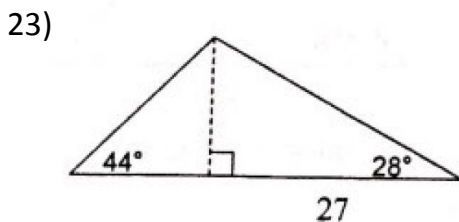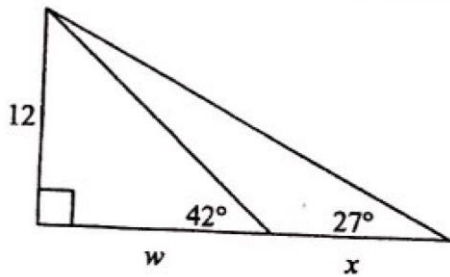Find the values of w and x. Round angles to the nearest degree and sides to the nearest tenth.

25)

12

42°   27°

w   x

26)

10   11

w

50°   x°
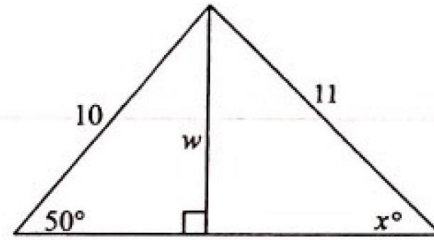
Application Problems

27) The area of a square garden is 128 m². How long is the diagonal across the garden?

28) A conveyor belt carries supplies from the 1st floor to the 2nd floor, which is 26 feet higher. The belt makes a 60° angle with the ground. To the nearest foot, how far do the supplies travel from one end of the conveyor belt to the other?

29) A large totem pole in the state of Washington is 100 feet tall. At a particular time of day, the totem pole casts a 249 foot long shadow. Find the measure of the angle of elevation from the end of the shadow to the nearest degree?

30) To find the height of a pole, a surveyor moves 140 feet away from the base of the pole and then, with a transit 4 feet tall, measures the angle of elevation to the top of the pole to be 44°. To the nearest tenth of a foot, what is the height of the pole?

31) An airplane pilot over the Pacific sights an atoll at an angle of depression of 5 degrees. At this time, the horizontal distance from the airplane to the atoll is 4629 meters. To the nearest meter, what is the height of the plane?

32) A communications tower is built on the top of a building with the following specifications: from a point 200 meters away from the base of the building, the angle of elevation to the top of the building is 15.9°, and the angle of elevation to the top of the tower is 23.6°. Find the height of the tower to a tenth of a meter.