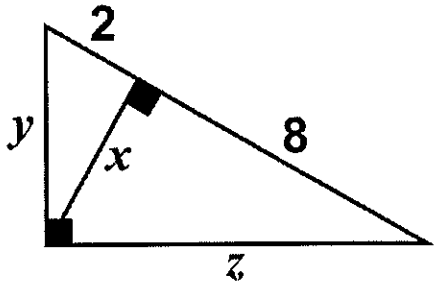
Honors Geometry – HW#15
Chapter 8 Review

Name_____

Find the missing lengths indicated. Leave your answer in simplest radical form.

1.

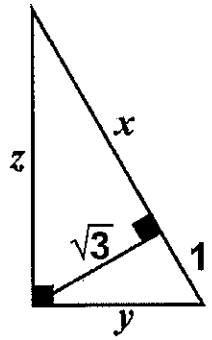


$x =$ _____

$y =$ _____

$z =$ _____

2.

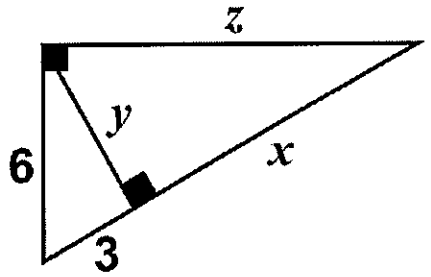


$x =$ _____

$y =$ _____

$z =$ _____

3.



$x =$ _____

$y =$ _____

$z =$ _____

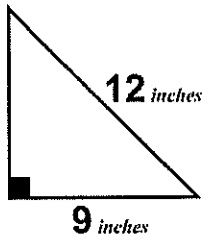
Classify the triangle as acute, right, or obtuse. Show your work.

4. $2,\ 3,\ \sqrt{13}$

5. $5,\ \sqrt{76},\ 7$

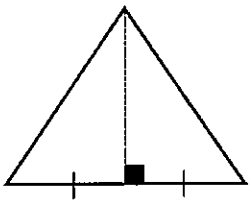
6. $5\sqrt{2},\ 2\sqrt{5},\ 4\sqrt{2}$

7. Find the area of the triangle. Leave your answer in simplest radical form.



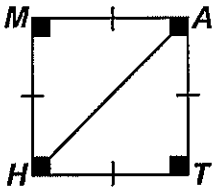
$Area =$ _____

8. The perimeter of the equilateral triangle is $24\ inches$. Find the area.



$Area =$ _____

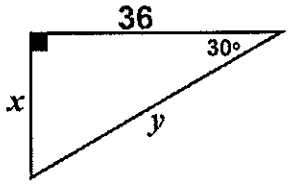
9. The perimeter of a square *MATH* is $32\sqrt{2}$ inches. Find the length of *HA*.



$HA =$ _____

Find the missing lengths indicated. Leave your answer in simplest radical form.

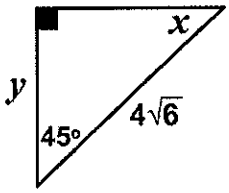
10.



$x =$ _____

$y =$ _____

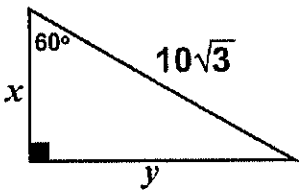
11.



$x =$ _____

$y =$ _____

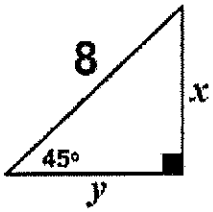
12.



$x =$ _____

$y =$ _____

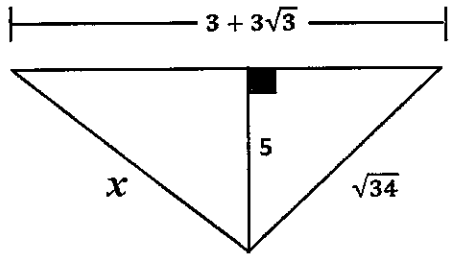
13.



$x =$ _____

$y =$ _____

14. Solve for the value of x.



$x =$ _____

Approximate the measure to the nearest hundredth (2nd decimal place).

15. $\sin 65°$ _____

16. $\cos 56°$ _____

17. $\tan A = 0.56$ _____

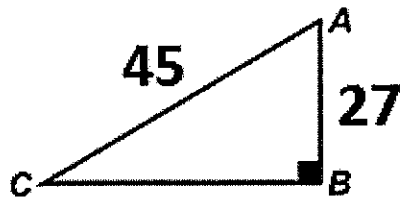
18. $\cos A = \frac{5}{8}$ _____

Use the diagram on the right to find the suggested trigonometric ratio. If necessary, simplify radicals.

19. $\sin A =$

$\cos A =$

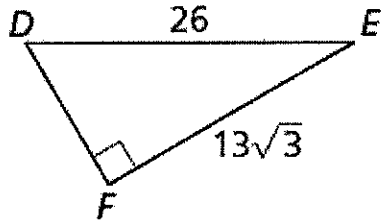
$\tan A =$



20. $\sin D =$

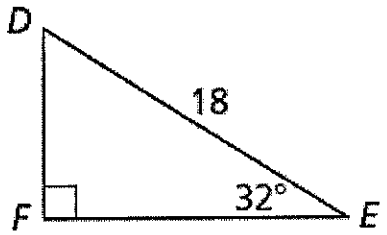
$\cos D =$

$\tan D =$



Solve the right triangle. Round angle measures to the nearest tenth and simplify radicals for sides.

21.

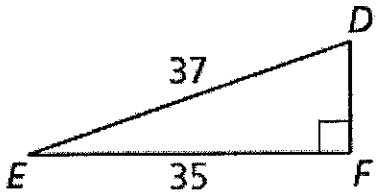


$DF =$ _____

$FE =$ _____

$m\angle D =$ _____

22.



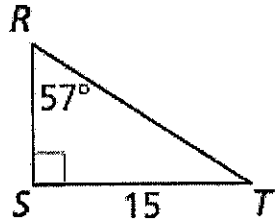
$DF =$ _____

$m\angle E =$ _____

$m\angle D =$ _____

Solve the right triangle. Round angle measures to the nearest tenth and simplify radicals for sides.

23.

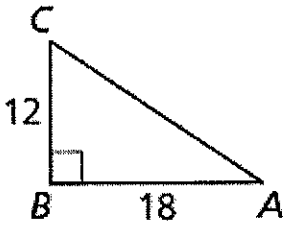


$RS =$ _____

$RT =$ _____

$m\angle T =$ _____

24.



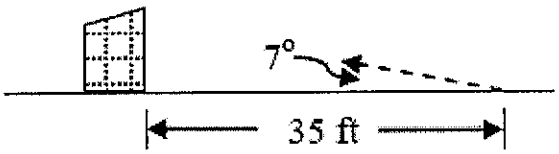
$CA =$ _____

$m\angle C =$ _____

$m\angle A =$ _____

Solve. If necessary, round your answers to the nearest tenth.

25. When a hockey player is 35 feet from the goal line, he shoots the puck directly at the goal. The angle of elevation at which the puck leaves the ice is 7°. The height of the goal is 4 feet. Will the player score a goal?



Answer = _____

26. Suppose you look down from the top of a vertical cliff to a cabin on a floor of a canyon. The angle of depression is 42.8°. How far is the cabin from the base of the cliff if the cliff is 302 feet high?

Answer = _____

27. A road climbs at 23° angle with the horizontal. Find the grade of the road.

28. The grade of a road is 21%. Find the angle the road makes with the horizontal.

*****Please round all angle measures and lengths to the nearest hundredth!!!**

29. A firefighter is rescuing a cat in a tree. If the branch that the cat is on is 15 feet above the ground and the ladder makes an angle of 63° with the ground, how long is the ladder?

30. A cable is used to support a TV tower that is 245 meters tall. If the angle that the cable makes with the ground is 78°, how long is the cable?

31. A surveyor needs to find out how far away she is from a 3000 foot cliff. Looking up at the cliff, the angle of elevation is 22°. How far is she from the cliff?

32. At a location 50 meters from the base of a tree, the angle of elevation is 33°. Determine the height of the tree.

33. A ladder is safe if the angle it makes with the ground is from 60 to 80°. How far, at minimum, should the ladder be placed from the base of the wall? THE LADDER IS 20 FEET.

34. From the top of a building, you look down at an object on the ground. If your eyes are 55 feet above the ground and the angle of depression is 50°, how far is the object?

35. To calculate the height of a tree, Marie measures the angle of elevation to be 34°. She measures her distance to be eight meters from the base of the tree. How high is the tree?

36. A building 14.5 meters tall casts a shadow of 11.4 meters along the level ground. At what angle does the shadow meet the ground?

37. A kite string is 60 feet long and makes an angle of 42° with the ground. How high above the ground is the kite?

38. A wire from the top of a 10-foot pole makes an angle of 35° with the ground. Find the distance between the base of the pole and the place where the wire meets the ground.

39. From eye level five feet off of the ground and 20 feet away from a flagpole, a person has to look up 40° to see the top of the pole. How high is the pole?

40. A parasail is towed behind a boat. The rope that is attached to the parasail is 42 feet long. The rope is connected to the boat at a point 1 foot above the surface of the water. The angle of elevation from the boat is 28° How high above water is the parasailer?