Completion /40

Secondary Math 2

Name Key

Unit 11 Right Triangle Trig Review

Date_____ Period____

1) Define a trig ratio (look at 11.1).

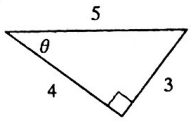
A ratio (fraction) of two side lengths of a right triangle.

2) When do you use inverse trig?

When you want to find a missing angle.

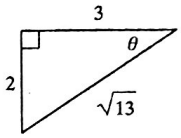
Find the value of the trig function indicated.

3) tan θ



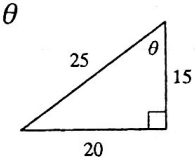
$\frac{3}{4}$

4) tan θ



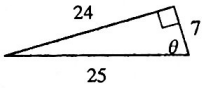
$\frac{2}{3}$

5) sin θ



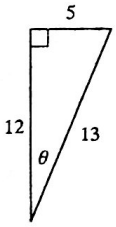
$\frac{4}{5}$

6) tan θ



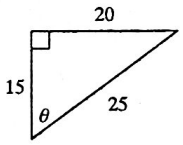
$\frac{24}{7}$

7) tan θ



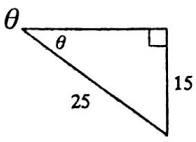
$\frac{5}{12}$

8) cos θ



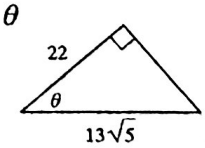
$\frac{3}{5}$

9) cos θ



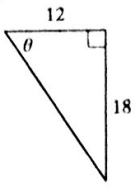
$\frac{4}{5}$

10) tan θ



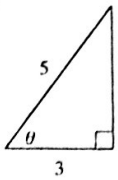
$\frac{19}{22}$

11) $\sin\theta$



$\frac{3\sqrt{13}}{13}$

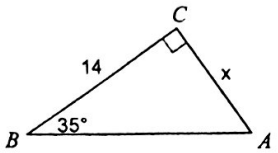
12) $\cos\theta$



$\frac{3}{5}$

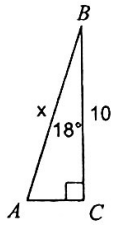
Find the measure of each side indicated. Round to the nearest hundreth.

13)



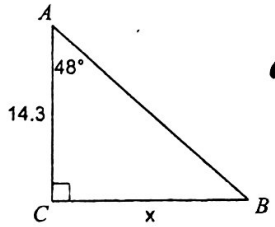
9.80

14)



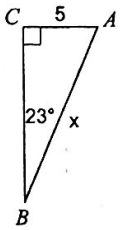
10.51

15)



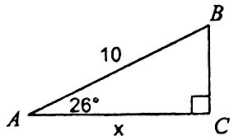
9.57

16)



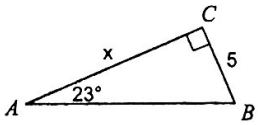
12.80

17)



8.99

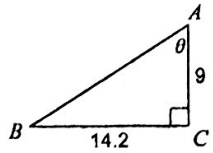
18)



11.78

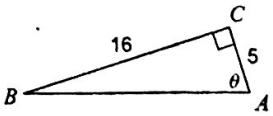
Find the measure of each angle indicated. Round to the nearest hundreth.

19)



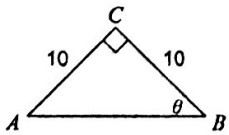
57.63°

20)



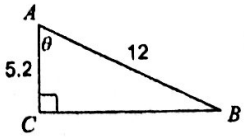
72.65°

21)



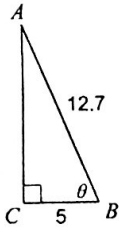
45°

22)



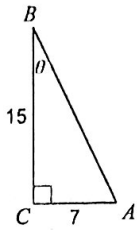
64.32°

23)



66.82°

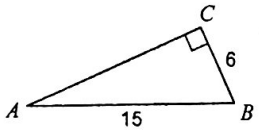
24)



25.02°

Solve each triangle. Round answers to the nearest hundreth.

25)

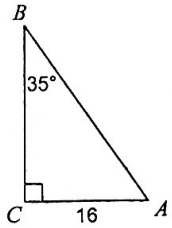


AB = 15 m∠A = 23.58°

BC = 6 m∠B = 66.42°

AC = $3\sqrt{21}$ m∠C = 90°

26)



AB = 27.90 m∠A = 55°

BC = 22.85 m∠B = 35°

AC = 16 m∠C = 90°

27) A nursery plants a new tree and attaches a guy wire to help support the tree while its roots take hold. An eight foot wire is attached to the tree and to a stake in the ground. From the stake in the ground the angle of elevation of the connection with the tree is 42°. Find to the nearest tenth of a foot, the height of the connection point on the tree.

5.4 ft

28) From the top of a fire tower, a forest ranger sees his partner on the ground at an angle of depression of 40°. If the tower is 45 feet in height, how far is the partner from the base of the tower, to the nearest tenth of a foot?

53.6 ft

29) Find the shadow cast by a 10 foot lamp post when the angle of elevation of the sun is 58°. Find the length to the nearest tenth of a foot.

6.2 ft

30) A ladder leans against a brick wall. The foot of the ladder is 6 feet from the wall. The ladder reaches a height of 15 feet on the wall. Find to the nearest degree, the angle the ladder makes with the wall.

68°

Find the sine or cosine that is equivalent to each value.

31) sin(58°)

cos(32°)

32) sin(10°)

cos(80°)

33) cos(47°)

sin(43°)

34) cos(55°)

sin(35°)

Simplify the following trig expressions as much as possible using the basic identities.

35) $\dfrac{\sin^2 x + \cos^2 x}{\cos^2 x}$

$\dfrac{1}{\cos^2 x}$

36) $\dfrac{\sin^2 x}{1 - \cos^2 x}$

1

37) $\dfrac{\tan^2 x}{\cancel{1 - \sin^2 x}}$ ← change

$1 - \cos^2 x$

$\dfrac{1}{\cos^2 x}$

38) $\dfrac{1 - \cos^2 x}{1 - \sin^2 x}$

$\tan^2 x$

39) $\cos^2 x \tan^2 x$

$\sin^2 x$

40) $\sin x \cdot (\sin^2 x + \cos^2 x)$

$\sin x$