Do Not Write on this Worksheet

Semester 1 Final: Review 1

Determine the coterminal angle and the reference angle for each given angle.

1) 313° 2) -130° 3) 702° 4) $\frac{29\pi}{6}$

Find the exact value of the following:

5) $\cos(120^\circ)$ 6) $\csc(-270^\circ)$ 7) $\sec(90^\circ)$

8) $\tan^2\left(\frac{5\pi}{4}\right)+\sec\frac{\pi}{3}$ 9) $\sin\left(\frac{\pi}{4}\right)-\cos\left(\frac{5\pi}{4}\right)$

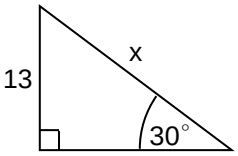
10) $\cot(\pi)$ 11) $\sec^2\left(\frac{\pi}{3}\right)$ 12) $\tan(240^\circ)\sin(135^\circ)-\sec(330^\circ)\cos(180^\circ)$

Use your calculator to find the following. Round to two decimal places.

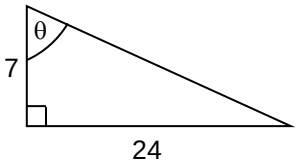
13) $\cos(163^\circ)$ 14) $\sin(237^\circ)$ 15) $\tan(319^\circ)$ 16) $\sin\left(\frac{3\pi}{7}\right)$ 17) $\cot\left(\frac{6\pi}{5}\right)$

Find the missing value, x or θ.

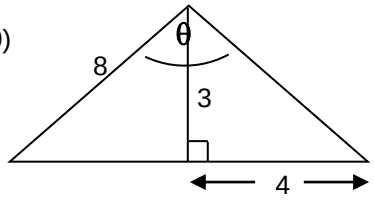
18)



19)



20)



21) Which trigonometric function represents the slope of the terminal side of an angle?

22) The terminal side of θ passes through $(-\sqrt{13}, 5)$. Find $\sin(\theta)$ and $\sec(\theta)$.

23) The terminal side of θ passes through $(5, -12)$. Find $\cot(\theta)$ and $\csc(\theta)$.

Solve for θ.

24) $\theta=\sin^{-1}(-1)$ 25) $\cos\theta=\frac{-\sqrt{3}}{2}$ 26) $\sec(\theta)=2$

Name the quadrants in which θ may be located.

27) $\cos\theta=\frac{-3}{5}$ 28) $\tan\theta=\frac{4}{3}$ 29) $\sin\theta=\frac{-2}{3}$

30) An observer at the top of a 60 foot tower sees his friend on the ground at an angle of depression of $3^\circ 22'$. How far away is the friend from the base of the tower?

31) A 16 foot ladder is placed against a wall so that the top of the ladder is 12 feet above the ground. What angle does the ladder make with the ground (i.e., what's the angle of elevation)?

32) A right triangle has a hypotenuse 11.5 cm long and one leg 8.3 cm long. Find the smaller acute angle.

33) A tree casts a shadow of 17 feet on the ground. The angle of elevation is 53°. Find the height of the tree.

Change to radians.

34) 240° 35) 600° 36) 90° 37) 30°

Change to degrees.

38) $\frac{2\pi}{3}$ 39) $\frac{7\pi}{6}$ 40) $\frac{9\pi}{4}$

41) 1 degree is equivalent to how many radians?

42) 1 radian is equivalent to how many degrees?