

**Test Review  
Chapter 6.1-6.3**

**ALL PROBLEMS MUST BE DONE ON SEPARATE PAPER OTHERWISE; THE REVIEW WILL NOT BE GRADED. SHOW ALL WORK FOR CREDIT. REVIEW IS DUE ON TEST DAY.**

**Convert the angle to D° M' S'' form. Round the answer to the nearest second.**

1)  $178.53^\circ$

**Convert the angle to a decimal in degrees. Round the answer to two decimal places.**

2)  $21^\circ 17' 34''$

**If s denotes the length of the arc of a circle of radius r subtended by a central angle  $\theta$ , find the missing quantity.**

3)  $r = 24.32$  centimeters,  $\theta = 3.4$  radians,  $s = ?$       4)  $r = \frac{1}{4}$  feet,  $s = 6$  feet,  $\theta = ?$

**Convert the angle in degrees to radians. Express the answer as multiple of  $\pi$ .**

5)  $72^\circ$

6)  $140^\circ$  Convert the angle in radians to degrees.

7)  $\frac{12\pi}{7}$

8)  $\frac{\pi}{3}$

**Convert the angle in degrees to radians. Express the answer as multiple of  $\pi$ .**

9)  $6^\circ$

**If A denotes the area of the sector of a circle of radius r formed by the central angle  $\theta$ , find the missing quantity. If necessary, round the answer to two decimal places.**

10)  $r = 20$  inches,  $\theta = \frac{\pi}{3}$  radians,  $A = ?$

11)  $\theta = \frac{\pi}{3}$  radians,  $A = 75$  square meters,  $r = ?$

12)  $\theta = \frac{\pi}{6}$  radians,  $A = 62$  square meters,  $r = ?$

13)  $r = 16$  inches,  $\theta = \frac{\pi}{4}$  radians,  $A = ?$

**Solve the problem.**

14) A circle has a radius of 5 centimeters. Find the area of the sector of the circle formed by an angle of  $25^\circ$ . If necessary, round the answer to two decimal places.

15) An irrigation sprinkler in a field of lettuce sprays water over a distance of 40 feet as it rotates through an angle of  $160^\circ$ . What area of the field receives water? If necessary, round the answer to two decimal places.

16) A gear with a radius of 2 centimeters is turning at  $\frac{\pi}{5}$  radians/sec. What is the linear speed at a point on the outer edge of the gear?

17) A gear with a radius of 8 centimeters is turning at  $\frac{\pi}{11}$  radians/sec. What is the linear speed at a point on the outer edge of the gear?

18) An object is traveling around a circle with a radius of 10 meters. If in 15 seconds it moves a distance forming a central angle of 3 radians, what is the linear speed of the object?

**In the problem, t is a real number and P = (x, y) is the point on the unit circle that corresponds to t.**

**Find the exact value of the indicated trigonometric function of t.**

19)  $\left(\frac{3}{8}, \frac{\sqrt{55}}{8}\right)$  Find  $\sin t$ .

20)  $\left(\frac{2}{5}, \frac{\sqrt{21}}{5}\right)$  Find  $\tan t$ .

**Find the exact values. Do not use a calculator.**

21)  $\cos \frac{\pi}{2}$

22)  $\cos 0$

23)  $\csc -\frac{\pi}{2}$

24)  $\sec \frac{\pi}{4}$

25)  $\csc 45^\circ$

26)  $\cot 45^\circ$

27)  $\cos 60^\circ$

28)  $\sec \frac{\pi}{6}$

29)  $\cos 60^\circ + \tan 60^\circ$

30)  $\cos \frac{10\pi}{3}$

31)  $\cos \frac{\pi}{3} + \tan \frac{5\pi}{3}$

**Use a calculator to find the approximate value of the expression rounded to two decimal places. Remember to check the mode on the calculator**

32)  $\sin 48^\circ$

33)  $\sec \frac{\pi}{12}$

**A point on the terminal side of an angle  $\theta$  is given. Find the exact value of all six trigonometric function of  $\theta$ .**

34) (8,15)

35) (3, -5)