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°

Convert the angle to a decimal in degrees. Round the answer to two decimal places.
2) 21°17'34''

If s denotes the length of the arc of a circle of radius r subtended by a central angle θ, find the missing quantity.
3) r = 24.32 centimeters, θ = 3.4 radians, s = ? 4) r = $\frac{1}{4}$ feet, s = 6 feet, θ = ?

Convert the angle in degrees to radians. Express the answer as multiple of π.
5) 90° 6) 135°**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 π.
9) 6°

If A denotes the area of the sector of a circle of radius r formed by the central angle θ, find the missing quantity. If necessary, round the answer to two decimal places.
10) r = 20 inches, θ = $\frac{\pi}{3}$ radians, A = ? 11) θ = $\frac{\pi}{3}$ radians, A = 75 square meters, r = ?
12) θ = $\frac{\pi}{6}$ radians, A = 62 square meters, r = ? 13) r = 16 inches, θ = $\frac{\pi}{4}$ 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° 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°. 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 a central angle of 3 radians is swept out, 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) $\csc 45°$

26) $\cot 45°$

27) $\cos 60°$

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

29) $\cos 60° + \tan 60°$

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.

32) $\sin 48°$

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

A point on the terminal side of an angle θ is given. Find the exact value of the indicated trigonometric function of θ.

34) $(5, -12)$ Find $\sin \theta$.

35) $(5, -4)$ Find $\tan \theta$.

36) $(5, 12)$ Find $\cos \theta$.

1) 178°31'48''
2) 21.29°
3) 82.7 cm
4) 24 radians
5) $\frac{\pi}{2}$
6) $\frac{3\pi}{4}$
7) 308.57°
8) 60°
9) $\frac{\pi}{30}$
10) 209.33 in^2
11) 11.97 m
12) 15.39 m
13) 100.48 in^2
14) 5.45 cm^2
15) 2234.02 ft^2
16) $\frac{2\pi}{5}$ cm/sec
17) $\frac{8\pi}{11}$ cm/sec
18) 2 m/sec
19) $\frac{\sqrt{55}}{8}$
20) $\frac{\sqrt{21}}{2}$
21) 0
22) 1
23) -1
24) $\sqrt{2}$
25) $\sqrt{2}$
26) 1
27) $\frac{1}{2}$
28) $\frac{2\sqrt{3}}{3}$
29) $\frac{1+2\sqrt{3}}{2}$
30) $-\frac{1}{2}$
31) $\frac{1-2\sqrt{3}}{2}$
32) 0.74
33) 1.04

34) $-\frac{12}{13}$

35) $-\frac{4}{5}$

36) $\frac{5}{13}$