C12 - 4.0 - Trig Review

All angles are in standard position unless otherwise stated.

1) Find θ in radians a a decimal and exact value.
a) 60^0
b) 140^0
c) 315^0
d) 180^0
e) 2000^0

2) Find θ in degrees.
a) $\frac{\pi}{6}$
b) 2
c) $\frac{\pi}{12}$
d) 3.14
e) 95
f) $\frac{2\pi}{5}$
g) $\frac{3\pi}{4}$

3) Find θ_r.
a) $\frac{3\pi}{4}$
b) 2_{rad}
c) $\frac{17\pi}{12}$
d) 3.14
e) 95
f) $\frac{2\pi}{5}$

4) Find θ_{stp} ; $0 \le \theta < 2\pi$.
a) $\frac{\pi}{6}$ $QIII$
b) 1 QII
c) 0.84 QI
d) $\frac{\pi}{5}$ QIV

5) Find $\pm\theta_{cot}$.
a) $\frac{\pi}{6}$
b) -2
c) $\frac{17\pi}{12}$
d) 3.14
e) 15
f) $\frac{3\pi}{4}$

6) Find θ_{pri}.
a) $\frac{13\pi}{6}$
b) 12
c) $-\frac{17\pi}{12}$
d) $-\frac{2\pi}{5}$
e) 6.28
f) 95
g) 2000

7) Find on Calculator.
a) $sec15^o = ?$
b) $\cos\frac{\pi}{5} = ?$
c) $\sin\frac{2\pi}{7} = ?$
d) $\tan\frac{5\pi}{9} = ?$
e) $\cot\frac{5\pi}{7} = ?$
f) $\csc\frac{4}{3} = ?$
g) $\sec 5.4 = ?$

8) Find w/out Calc. (Special Triangles)
a) $\sin 30^o = ?$
b) $cos315^o = ?$
c) $sec120^o = ?$
d) $cot300^o = ?$
e) $\cos\frac{\pi}{3} = ?$
f) $\sin\frac{2\pi}{3} = ?$
g) $\tan\frac{5\pi}{6} = ?$
h) $\cot\frac{25\pi}{6} = ?$
i) $sec120^o = ?$
j) $\sin\frac{\pi}{6} + \cos\frac{\pi}{3} = ?$
k) $\cos^2\frac{\pi}{4}$?

9) Find θ_{stp} w/out Calc ; $0 \le \theta < 2\pi$.
a) $\sin\theta = -\frac{1}{2}$
b) $2tan\theta = -2$
c) $\sqrt{2}sec\theta - 1 = -3$
d) $\cos^2\theta = \frac{3}{4}$
$\sin^2\theta = \frac{1}{2}$
$\sec^3\theta = -8$

10) Find θ_{stp} on Calc ; (Inverse/Algebra/GraphingCalc) $0 \le \theta < 2\pi$.
a) $\sin\theta = -0.4$
b) $5\cos\theta = 1$
c) $3sec\theta + 1 = -5$
d) $sin\theta + cos\theta = 0$
e) $\sin\theta = \theta - 1$
f) $sin\theta = -2$

11) Find θ_{stp} *on* Calc ; $-\pi \le \theta < 3\pi$.
a) $\sin\theta = -0.6$

Check on Calculator!

12) Find θ_{gen} w/out Calc in radians.
a) $\sin\theta = -\frac{1}{\sqrt{2}}$
b) $tan\theta = -1$
c) $sec\theta = -2$

Find θ_{gen} w/out calc in radians.
$\sin\theta = -1$
$tan\theta = -1$
$sec\theta = -2$

13) Find θ_{gen} on Calc ; In radians.
a) $2\sin\theta = -1.6$
b) $6\cos\theta + 1 = 5$
c) $3\tan\theta = -5$

14) Find w/out Calc. (Unit Circle)
a) $sin\pi = ?$
b) $\cos\frac{3\pi}{2} = ?$
c) $\tan\frac{\pi}{2} = ?$
d) $\cot(-\frac{\pi}{2}) =$
e) $sec\pi = ?$
f) $\csc\frac{3\pi}{2} = ?$
g) $\sec(-5\pi) = ?$

15) Find θ_{stp} w/out Calc ; $0 \le \theta < 2\pi$.
a) $2sin\theta = 0$
b) $\cos^2\theta = 1$
c) $tan\theta = und$
d) $sec\theta = und$

16) Find θ_{stp} w/out Calc ; $-\pi \le \theta < 3\pi$.
a) $\sin\theta = 1$

17) Find Non-Permissible Values/Restrictions & Asymptotes. $0 \le \theta < 2\pi$ *And* θ_{gen}
a) $\frac{1}{cos\theta}$, $tan\theta$, $sec\theta$
b) $\frac{1}{sin\theta}$, $cot\theta$, $csc\theta$
c) $\frac{1}{tan\theta}$, $\frac{1}{cot\theta}$
d) $\frac{1}{cos\theta + 1}$
e) $\frac{1}{\cos^2 x - 1}$
f) $\frac{1}{\sin^2\theta + 1}$
g) $\frac{1}{sin\theta - \frac{1}{2}}$
h) $\frac{1}{4\cos^2\theta - 1}$

Radians
Degrees
Thetas
Calculator
Expressions
Operations

Equations
Algebra
Special Triangles
Unit Circle
Period/Domain Change
NPV's
Points

Factoring
Arc Length/Area
Angular Velocity
Graphing
Word Problems
Identities

C12 - 4.0 - Trig Review

Check on Calculator!

18) Find θ_{stp} ;
(Period Change)
$0 \le \theta < 2\pi$
& θ_{gen} w/out Calc.
$a)\ sin2\theta = 0$
b) $\cos\frac{1}{2}\theta = \frac{1}{2}$
c) $2\cos(\theta - 10) = 1$

19) $Find\ sin\theta, cos\theta, tan\theta, csc\theta, sec\theta, and\ cot\theta$ $for\ the\ following\ points\ and\ find\ \theta_{stp}.$
$a)\ (-4,3)$
$b)\ (0,1)$

20) Find θ_{stp} ;
$0 \le \theta < 2\pi$
& θ_{gen} w/out Calc.
$a)\ \cos\left(\frac{\pi}{3}(\theta - 1)\right) = \frac{1}{2}$
$b)\ \sqrt{2}\sin\left(\frac{\pi}{4}(\theta - 6)\right) + 1 = 2$

21) Find θ_{stp}.
(Substitution/Factoring/…)
$a)\ sin\theta + sin\theta = 1$
$b)\ 1 + 6cos\theta = 2cos\theta + 9$
$c)\ \frac{tan\theta}{tan\theta + 1} = -2$
$d)\ sin\theta - csc\theta = 0$

21) Find θ_{stp}.
a) $\sin\theta\cos^2\theta + \sin\theta\cos\theta = 0$
b) $\sin^2\theta + \sin\theta - 2 = 0$
c) $2\sin^2\theta + \sin\theta - 1 = 0$
d) $3\cos^2\theta - 8cos\theta - 5 = 0$

22) Solve the point on the unit circle.
$a)\ \left(-\frac{1}{2}, y\right) QII$
$b)\ \left(x, -\frac{\sqrt{2}}{2}\right)\ QIV$

23) Is the point on the unit circle?
a) $\left(\frac{1}{4}, \frac{\sqrt{15}}{4}\right)$
b) $\left(-\frac{1}{2}, \frac{1}{2}\right)$
c) (0,1)

24) Solve the point on the unit circle. w/out calc.
$a)\ p\left(\frac{5\pi}{4}\right) = ?$
$b)\ p\left(\frac{11\pi}{6}\right) = ?$
$c)\ p(\pi) = ?$
$d)\ p(3\pi) = ?$

28) $sin\theta = \frac{3}{5}$, in QII,Find the Intersection Point of the Terminal arm and the Unit-Circle

29) $If\ cos\theta = m\ , QIII,$ Find the Intersection Point of the Terminal arm and the Unit-Circle

30) How many Solutions
$0 \le \theta < 2\pi$
$a)\ sin\theta = 0$
b) $cos\theta = \frac{1}{2}$
$c)\ tan2\theta = 0$
d) $\sin\frac{1}{2}\theta = 1$
e) $\cos^2\theta = \frac{1}{\sqrt{2}}$

31) If $\sin\theta = -\frac{1}{\sqrt{2}}$: , QIV.
Find cotθ

32) Find $\theta\ if\ sin\theta = cos\theta$, $0 \le \theta < 360.$

33) Find two other trig ratios equal to $\sin\frac{5\pi}{4}$.

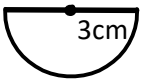
34) Solve for x.
$0 \le \theta < \frac{\pi}{2}$
a) $\sin\frac{\pi}{6} = cosx$
$0 \le \theta < 2\pi$
b) $\tan\frac{3\pi}{2} = cosx$

35) If : $2x + 3y = 0, x \ge 0.$
Find sinθ & secθ

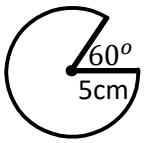
36)
a) Find the arc length.
$\theta = \frac{7\pi}{6}, r = 3$
b) Find the radius.
$\theta = \frac{\pi}{6}, arc = 50$
c) Find θ in radians. $arc = 10, radius = 20$

37) Find the Perimeter and Area

a)



b)



38)
a) Find the Sector Area.
$\theta = \frac{\pi}{6}, r = 5$
b) Find Sector Area.
$arc = 10, radius = 20$
c) Find the arc length and θ in radians.
$A_{sector} = 100\ \ r = 20$

39) Find the angular velocity of a wheel travelling 50 meters per second if the radius 2 meters. How far in 100 seconds?