Pre-Calculus
Unit 3 – September 29 to October 14

Date	Topic	Assignment
Mon 9/29	4.1 - Radian and Degree Measure	P.290 (7-19 odd, 31-41 odd, 47-54 all)
Tues 9/30	4.1 - Radian and Degree Measure	Worksheet
Wed 10/1	4.1 - Radian and Degree Measure	P.290 (83-93 odd, 101-104)
Thurs 10/2	4.2 - Unit Circle Project	Paper Plate Project
Fri 10/3	4.2 - Unit Circle	Paper Plate Project + Unit Circle part 1
Mon 10/6	4.2 - Unit Circle	Unit Circle part 2
Tues 10/7	4.3 - Right Triangle Trig	P.308 (1-4, 11-14, 17-27)
Wed 10/8	4.4 - Trig Functions of Any Angle	P. 318 (1-7 odd, 11-14, 15, 17, 21, 23, 29-36)
Thur 10/9	4.4 - Trig Functions of Any Angle	P.318 (37 - 87 every other odd)
Fri 10/10	4.4 - Trig Functions of Any Angle	Workday. Finish problems and get review.
Mon 10/13	Review - Test 1.3	Study!!
Tues 10/14	**Test 1.3** - 4.1-4.4	

<u>Tuesday, September 30</u> - Angles and Radian Measures

Change each degree measure to radian measure in terms of π.

1) 135° 2) 210° 3) 300° 4) 1250° 5) –450° 6) –75°

Change each radian measure to degree measure. Round to the nearest tenth if necessary.

7) $\frac{7\pi}{12}$ 8) $\frac{11\pi}{3}$ 9) 17 radians 10) $\frac{-\pi}{6.2}$ 11) –3.5 radians 12) $\frac{3\pi}{2}$

Convert the given degree into DMS or the DMS into degree.

13) 43.1025° 14) 102° 45' 54" 15) 43.375° 16) 29° 30' 30"

Friday, October 3 - Unit Circle part 1

1. Does cos θ increase or decrease as

a) θ increases from 0 to 90 degrees?
b) θ increases from 90 to 180 degrees?
c) θ increases from 180 to 270 degrees?
d) θ increases from 270 to 360 degrees?

2. Does sin θ increase or decrease as

a) θ increases from 0 to 1.57 radians?
b) θ increases from 1.57 to 3.14 radians?
c) θ increases from 3.14 to 4.71 radians?
d) θ increases from 4.71 to 6.28 radians?

II. Evaluate. Do not use a calculator!

3. a) $\sin 180°$ b) $\cos 180°$ c) $\sin 270°$ d) $\cos 270°$ e) $\tan 180°$

4. a) $\sin \pi$ b) $\cos(-\pi)$ c) $\sin\frac{3\pi}{2}$ d) $\cos\frac{\pi}{2}$ e) $\tan\frac{\pi}{2}$

III. Are the following positive, negative or zero? Do not use a calculator!

5. a) $\sin\frac{5\pi}{3}$ b) $\cos\frac{7\pi}{6}$ c) $\sin\frac{\pi}{4}$ d) $\cos\frac{3\pi}{4}$ e) $\tan\frac{7\pi}{4}$

6. a) $\sin\frac{7\pi}{4}$ b) $\cos\frac{3\pi}{2}$ c) $\sin\left(-\frac{\pi}{6}\right)$ d) $\sin\frac{\pi}{3}$ e) $\tan\left(-\frac{2\pi}{3}\right)$

V. In which quadrant can θ lie under the given conditions?

7. $\sin\theta > 0$ 8. $\cos\theta > 0$ 9. $\cos\theta < 0$ 10. $\sin\theta < 0$ 11. $\tan\theta < 0$

VI. Solve each problem. Round your answers to 3 decimal places, where appropriate.

12. The measure of a central angle is $50°$ and the radius of the circle is 4 inches. Determine the arc length.
13. The length of an arc of a circle is 14 cm. If the radius is 4 cm, find the measure of the central angle.

Monday, October 6 - Unit Circle part 2

I. Evaluate. Do not use a calculator!

1. a) $\sin(-90°)$ b) $\cos(-90°)$ c) $\sin 360°$ d) $\tan 270°$ e) $\cos 450°$

2. a) $\cos 2\pi$ b) $\sin\left(-\frac{\pi}{2}\right)$ c) $\sin 3\pi$ d) $\cos\left(-\frac{3\pi}{2}\right)$ e) $\tan(-3\pi)$

II. Are the following positive, negative or zero? Do not use a calculator!

3. a) $\cos 3\pi$ b) $\sin\frac{2\pi}{3}$ c) $\sin\frac{11\pi}{6}$ d) $\cos\left(-\frac{\pi}{2}\right)$ e) $\tan\frac{4\pi}{3}$

4. a) $\cos\left(-\frac{\pi}{3}\right)$ b) $\tan\frac{\pi}{6}$ c) $\sin\frac{5\pi}{4}$ d) $\cos\frac{7\pi}{4}$ e) $\tan\frac{5\pi}{6}$

5. a) $\sin 3$ b) $\cos 4$ c) $\tan 5$ d) $\sin 6$ e) $\cos 1.57$

III. Fill in the blank with $<$, $>$, $=$. Do not use a calculator!

6. a) $\sin 40°$ ___ $\sin 30°$ b) $\cos 40°$ ___ $\cos 30°$ c) $\sin 172°$ ___ $\sin 8°$

7. a) $\sin 310°$ ___ $\sin 230°$ b) $\sin 130°$ ___ $\sin 50°$ c) $\cos 50°$ ___ $\cos(-50°)$

8. a) $\sin 169°$ ___ $\sin 168°$ b) $\cos 2$ ___ $\cos 1$ c) $\sin 3$ ___ $\sin(-3)$

IV. In which quadrant can θ lie under the given conditions?

9. $\sin\theta = \cos\theta$ 10. $\sin\theta < 0$ *and* $\tan\theta > 0$ 11. $\sin\theta > 0$ *and* $\cos\theta > 0$ 12. $\sin\theta < 0$ *and* $\cos\theta > 0$

VI. Solve each problem. Round your answers to 3 decimal places, where appropriate.

13. The length of an arc of a circle is 28.5 inches. If the central angle measures 2.5 radians, what is the length of the radius of the circle?
14. A 100-degree arc of a circle has a length of 7 cm. What is the radius of the circle?

VII. Determine the measure of the angle.

15) $\frac{1}{4}$ rotation clockwise in degrees

16) 2 rotations counterclockwise in radians

17) 1.5 rotation clockwise in radians

18) $\frac{2}{3}$ rotation clockwise in radians