

Teacher: Mr. Whetstone

Class: Algebra 2 Pre-AP

Periods: 4 and 5

**Assignment: Week of 27 April
& 4 May**

If turning in paper packet and work, make sure to include this header information on all pages!

From the Student:

Student Name

Teacher Name

Name of class

Period #

OTL #

Distance Learning: Week of 27 April & 4 May 2020:

Assignments are accessible through YouTube videos. I will post the YouTube url's each day through the Remind app. You can also receive them by e-mail. Work can be submitted through Remind and e-mail, which I highly encourage. You can sign up for Remind by texting the message @whet-alg2 to the number 81010. You can also contact me through e-mail at swhetstone@tusd.net.

My office hours are 10 am – 12 pm, M–F. You can contact me with questions either through Remind or by e-mail. Please check your Remind messages regularly.

Topic: Radian Measures, Unit Circle Trigonometry & Trig. Functions

Monday: 27 April 2020

Lesson 17.1

OTL#143

pg. 834-837, #16-17, 20-21, 23-25

Tuesday: 28 April 2020

Lesson 17.2

Print out Lesson 17.2 Explore worksheet to write on as part of the notes (see below).

OTL#144

Unit Circle Trig. (Degrees) worksheet (see below), #1-12

Wednesday: 29 April 2020

Lesson 17.2

OTL#145

Unit Circle Trig. (Radians) worksheet (see below), #1-12

Thursday: 30 April 2020

Lesson 17.2

OTL#146

Unit Circle Trig. (Any Angle/Arc) worksheet (see below), #1-20

Friday: 1 May 2020

Lesson 17.2

OTL#147

pg. 847-848, #1-17

Monday: 4 May 2020

Lesson 17.2

OTL#148

pg. 848-850, #18-27

Tuesday: 5 May 2020

Lesson 17.3

OTL#149

pg. 858-861, #1-16

Wednesday: 6 May 2020

Lesson 17.3

OTL#150

pg. 862-863, #17-25

Thursday: 7 May 2020

Lesson 18.1

OTL#151

Graphing the Parent Trig. Functions worksheet (see below), #1-7

Friday: 8 May 2020

Lesson 18.1

OTL#152

pg. 881-882, #1-6 (*Plot at least 2 cycles!!*)

Other resources that can help are...

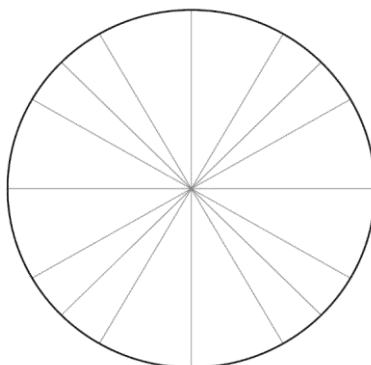
Khan Academy videos on radian measures, unit circle trigonometry & trig. functions.

YouTube videos on radian measures and unit circle trigonometry & trig. functions.

“Algeomulus Prep. Academy” videos (West High, student-made!!).

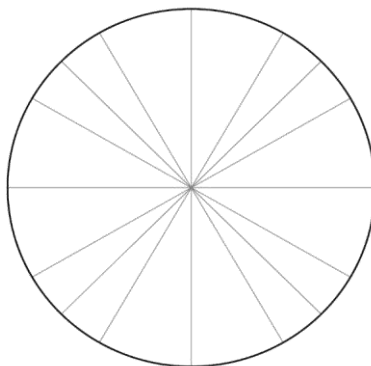
<https://youtu.be/M2Y1lSB1vaE>

1. Inscribe a 30° - 60° - 90° triangle in each quadrant of the unit circle with the 30° angle as the angle of rotation. For each triangle, indicate the signed lengths for all three sides. Complete the table below using the signed lengths.



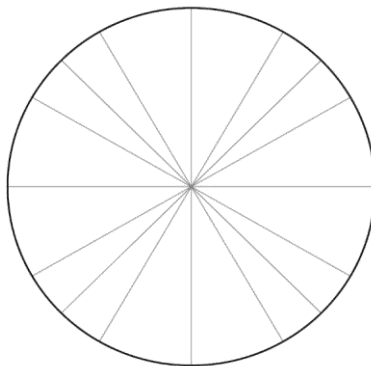
	Quadrant I	Quadrant II	Quadrant III	Quadrant IV
Angle of Rotation, θ	30°			
$\sin \theta$	$\frac{1}{2}$			
$\cos \theta$	$\frac{\sqrt{3}}{2}$			
$\tan \theta$	$\frac{\sqrt{3}}{3}$			

2. Inscribe a 45° - 45° - 90° triangle in each quadrant of the unit circle with the 45° angle as the angle of rotation. For each triangle, indicate the signed lengths for all three sides. Complete the table below using the signed lengths.



	Quadrant I	Quadrant II	Quadrant III	Quadrant IV
Angle of Rotation, θ	45°			
$\sin \theta$	$\frac{\sqrt{2}}{2}$			
$\cos \theta$	$\frac{\sqrt{2}}{2}$			
$\tan \theta$	1			

3. Inscribe a 30° - 60° - 90° triangle in each quadrant of the unit circle with the 60° angle as the angle of rotation. For each triangle, indicate the signed lengths for all three sides. Complete the table below using the signed lengths.



	Quadrant I	Quadrant II	Quadrant III	Quadrant IV
Angle of Rotation, θ	60°			
$\sin \theta$	$\frac{\sqrt{3}}{2}$			
$\cos \theta$	$\frac{1}{2}$			
$\tan \theta$	$\sqrt{3}$			

Now, answer the following questions:

1. What do you observe about the absolute values of the trigonometric functions in any row of each table?
2. Identify which quadrants have positive values for $\sin \theta$ and which quadrants have negative values. Do the same for $\cos \theta$ and $\tan \theta$.
3. How do the signed lengths of the triangles' legs relate to the point where the triangle intersects the unit circle? Use this to relate the coordinates of the intersection points to the trigonometric functions of the angle θ .

NO CALCULATORS!!

DO NOT WRITE ON THIS FORM!!

Using the unit circle, find the exact value of each trigonometric function.

1. $\cos 300^\circ$

2. $\sin 135^\circ$

3. $\tan 135^\circ$

4. $\cos 150^\circ$

5. $\cos(-120^\circ)$

6. $\sin(-300^\circ)$

7. $\sin(-45^\circ)$

8. $\sin 60^\circ$

9. $\tan(-240^\circ)$

10. $\tan(-30^\circ)$

11. $\tan 240^\circ$

12. $\cos(-330^\circ)$

NO CALCULATORS!!

DO NOT WRITE ON THIS FORM!!

Using the unit circle, find the exact value of each trigonometric function.

1. $\sin \frac{2\pi}{3}$

2. $\tan \frac{11\pi}{6}$

3. $\cos \frac{7\pi}{4}$

4. $\tan \frac{4\pi}{3}$

5. $\sin \frac{7\pi}{6}$

6. $\cos \frac{5\pi}{3}$

7. $\tan \frac{3\pi}{4}$

8. $\sin \left(-\frac{5\pi}{3} \right)$

9. $\cos \left(-\frac{5\pi}{4} \right)$

10. $\tan \frac{\pi}{3}$

11. $\sin \left(-\frac{7\pi}{4} \right)$

12. $\cos \left(-\frac{5\pi}{6} \right)$

Unit Circle Trig. (Any Angle or Arc)

Using *the unit circle*, find the exact value of each trigonometric function. **NO CALCULATORS!!**

1. $\tan \frac{9\pi}{4}$

2. $\sin \left(-\frac{17\pi}{3} \right)$

3. $\sin (-390^\circ)$

4. $\cos 3\pi$

5. $\tan (-90^\circ)$

6. $\sin \pi$

7. $\cos \frac{13\pi}{3}$

8. $\tan (-765^\circ)$

9. $\cos \frac{17\pi}{4}$

10. $\tan (-600^\circ)$

11. $\sin \left(-\frac{11\pi}{3} \right)$

12. $\sin (-90^\circ)$

13. $\cos (-630^\circ)$

14. $\tan \frac{29\pi}{6}$

15. $\sin \frac{5\pi}{3}$

16. $\tan 5\pi$

17. $\cos (-960^\circ)$

18. $\tan \left(-\frac{5\pi}{2} \right)$

19. $\sin \frac{8\pi}{3}$

20. $\cos (-5\pi)$

Graphing the Parent Trig. Functions

1. From the unit circle, make a large table of values for $f(x) = \sin x$ for every special angle from 0 to 2π . Then, on a large axis system graph $f(x) = \sin x$.

NOTE: Scale the x-axis by $\frac{\pi}{12}$ and the y-axis by 0.1.

2. Repeat problem 1 for $f(x) = \cos x$.
3. For $f(x) = \sin x$ and $f(x) = \cos x$, identify the amplitude, midline, domain, range, and period.
4. On the interval $0 \leq x \leq 2\pi$, identify the interval(s) where the sine function is positive. How does this relate to the unit circle?
5. On the interval $0 \leq x \leq 2\pi$, identify the interval(s) where the sine function is negative. How does this relate to the unit circle?
6. On the interval $0 \leq x \leq 2\pi$, identify the interval(s) where the cosine function is positive. How does this relate to the unit circle?
7. On the interval $0 \leq x \leq 2\pi$, identify the interval(s) where the cosine function is negative. How does this relate to the unit circle?