

Review for Unit 2 (with extra help)

I made this review with your test in mind. You shouldn't need a calculator for this review, to help you feel prepared.

1. Find the reference angles for each angle

a) $t = \frac{5\pi}{6}$

c) $t = \frac{3\pi}{4}$

b) $t = \frac{7\pi}{9}$

d) $\frac{11\pi}{6}$

2. Find two positive and two negative coterminal angles for each value below

a) $t = \frac{\pi}{3}$

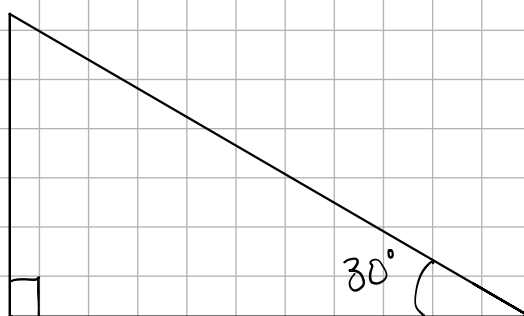
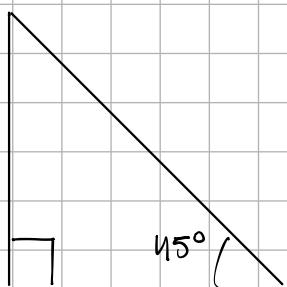
b) $t = \frac{2\pi}{7}$

3. Find an angle with a measure between 0° and 360° that is coterminal with the angle of measure 1305° in standard position

4. Define all 6 trig functions in terms of opposite, adjacent and hypotenuse. Your angle should be θ

Ex: $\sin \theta = \frac{\text{opp.}}{\text{hyp}}$ $\rightarrow$ Now, you only have 5 more 😊

5. Label each side of the special triangles with either 1, $\sqrt{3}$, $\sqrt{2}$, or 2.



6. If $\sin \theta = \frac{4}{5}$, Sketch a right triangle with acute angle θ , and find the other 5 trig ratios of θ .

7. Circle each trig value that is positive in the quadrants below

QII				QI	
All	sin			All	sin
cos	tan			cos	tan
QIII				QIV	
All	sin			All	sin
cos	tan			cos	tan

8. Determine what quadrant each angle is in

a) $\frac{\pi}{4}$

c) $\frac{11\pi}{6}$

b) $\frac{5\pi}{4}$

d) $\frac{9\pi}{4}$

9. Define each value (try to do this question without your unit circle)

a) $\tan \frac{\pi}{4}$

b) $\cos(120^\circ)$

c) $\sin(\frac{5\pi}{6})$

d) $\sin(300^\circ)$

10. Find the terminal point of the following values

a) $-\frac{\pi}{2}$

b) $\frac{\pi}{4}$

c) $\frac{3\pi}{2}$

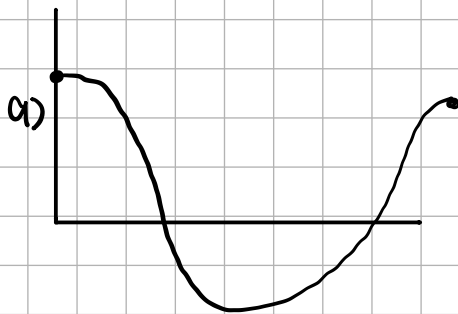
d) $\frac{5\pi}{3}$

11. If $\csc \theta = \frac{10}{6}$ and $\cos \theta < 0$, find $\sec \theta$ and $\cot \theta$. Give exact values

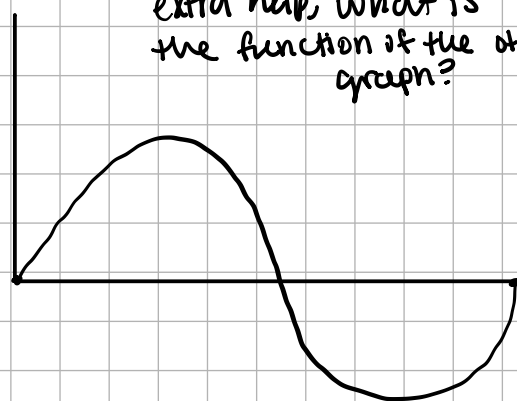
$\sec \theta =$ _____

$\cot \theta =$ _____

12. Which graph is a cos graph?



b)



extra help, what is the function of the other graph?

13. Find the amplitude of the following functions

a) $y = 2 \cos(x)$

c) $y = \tan(x - \frac{\pi}{6})$

b) $y = \frac{1}{3} \sin(x - \frac{\pi}{4})$

d) $y = -\cos 3x$

14. Find the period and horizontal shift of the following functions

a) $y = 3 \cos(3x - \frac{\pi}{4})$

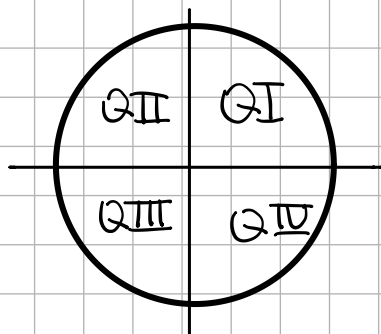
c) $y = 2 \tan(\pi x - \frac{\pi}{3})$

b) $y = \sin(2\pi x - \frac{\pi}{6})$

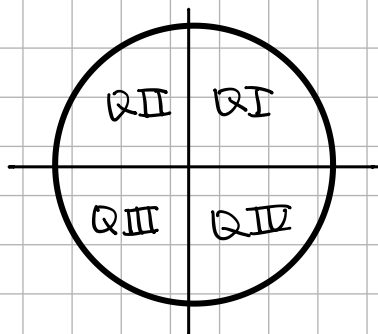
d) $\frac{1}{2} \tan(2x - \frac{\pi}{6})$

15. Highlight or circle the following quadrants that we evaluate $\sin$, $\cos$ and $\tan$ inverse in

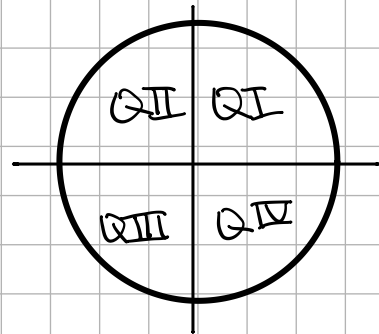
$\sin^{-1}(x)$



$\cos^{-1}(x)$



$\tan^{-1}(x)$



16. Evaluate the following trig functions

a) $\arccos\left(\frac{1}{2}\right)$

c) $\arctan(\sin(\pi/2))$

b) $\sin^{-1}\left(\cos\left(\frac{5\pi}{6}\right)\right)$

d) $\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

17. A clock has a minute hand only which has a length of 8 cm. If it starts in the 12 O'clock position as pictured, write the function describing the distance, d , of the tip of the minute hand from the horizontal diameter of the clock after t minutes.

Dampening harmonic motion

period =

$$y = ke^{-ct} \sin \omega t$$

$$y = ke^{-ct} \cos \omega t \quad \text{or} \quad c > 0$$

amplitude =

dampening constant =

18. A mass is attached to the end of a spring. The mass is pulled down from equilibrium by 30.1 cm and released. The dampening constant is $c=1.5$ and the period is $p=3$. Find the model of the mass.