

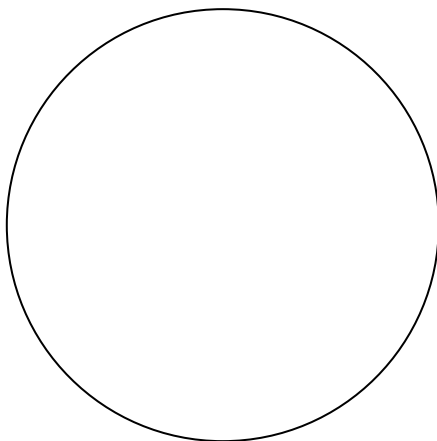
Final Review – 2 of 3

For full credit circle answers and **show all your work**. Each problem is worth five points.

Sketch the following angle measures on the circle below:

1) 55°

2) $\frac{4\pi}{3}$



3) Convert 55° to radian measure

4) Convert $\frac{4\pi}{3}$ to degree measure.

5) Given $\sin t = \frac{2}{5}$, draw a picture showing $\sin(\pi - t)$ and give the value.

6) Given the function value $\tan \alpha = \frac{5}{12}$, draw a picture and find: $\sin \alpha =$ $\tan \alpha =$

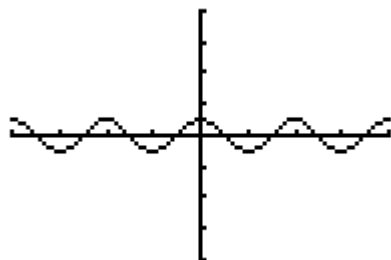
7) Use trigonometric identities to simplify: $\sin \theta(\csc \theta - \sin \theta) =$.

8) Use trigonometric identities to show:
 $\tan \theta \cos \theta = \sin \theta$.

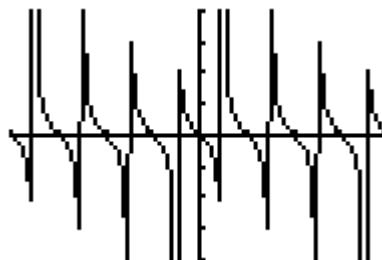
9) Find the period and amplitude of of:
 $y = 6 \cos 2x$.

10) Given the window and graph below, adjust the period and amplitude of the **sine** function to make the same graph.

11) Using the same window as #10, adjust the **tangent** function to make the graph on the right.



```
WINDOW
Xmin=-360
Xmax=360
Xscl=90
Ymin=-4
Ymax=4
Yscl=1
Xres=1
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12) The sine function is not 1-1 (does not pass the horizontal line test) and thus has no inverse. Given this information, explain what the arcsin function is (since it is not the inverse of the sine function).

13) Solve the triangle given $A = 40^\circ$,
 $b = 10$ m

14) There is a ship on the ocean's surface that is 3 miles from a submerged submarine. The angle of depression is 135° , find the submarine's depth.

15) Find an exact value of $\sin(\arccos \frac{x}{4})$ = by sketching a right triangle.

16) Find possible values of $\sin \theta$ and $\cos \theta$ given $\tan \theta = -2$. $\sin \theta =$ $\cos \theta =$

17) Factor and use fundamental identities to simplify: $\tan^2 x - \tan^2 x \sin^2 x =$

18) Verify the identity $\cot^2 y(\sec^2 y - 1) = 1$.

19) Solve the equation: $2 \sin x - 1 = 0$.

20) Write $\cos(\arccos x + \arcsin x)$ as an algebraic expression (using sum / difference identities) and simplify.