

Honors Precalculus

Chapter 4 – Pt 2 PRACTICE TEST

Name: _____ Per: _____

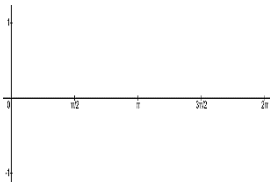
Use an additional sheet, if necessary, to show your work

1. Fill in the tables for $\sin x$ and $\cos x$ and then sketch a graph of each.

x	0	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π
$\sin x$					



x	0	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π
$\cos x$					



2. Identify the amplitude and period of each.

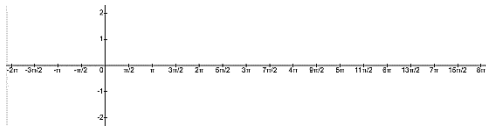
$2\sin(4x)$	$-1.5\cos(x/4)$
Amplitude:	Amplitude:
Period:	Period:

3. Sketch the graph for each from Problem 2.

$2\sin(4x)$



$-1.5\cos(x/4)$



4. Describe how the graph of $g(x) = \sin\left(x - \frac{\pi}{2}\right) + 1$ compares to $f(x) = \sin(x)$ and then sketch $g(x)$.

- 5.

Identify the information for

$$f(x) = 4 \cos\left(\frac{1}{2}\left(x - \frac{\pi}{6}\right)\right) - 5.$$

Horizontal shift:

Period:

Amplitude:

Vertical shift:

Identify the information for

$$f(x) = 0.5 \sin(2x - \pi) + 8.$$

Horizontal shift:

Period:

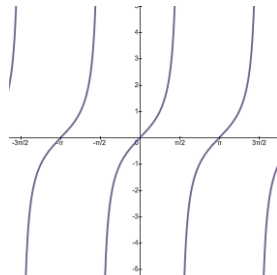
Amplitude:

Vertical shift:

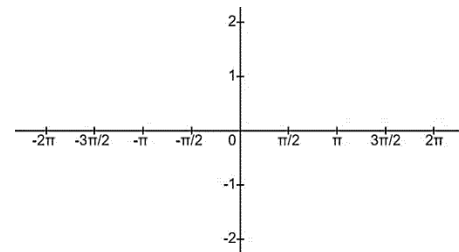
6. Use the parent table for $\sin x$ to fill in the table for $f(x) = 0.5 \sin(2x - \pi) + 8$

x					
$f(x)$					

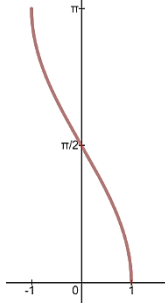
7. Use the fact that $f(x) = \tan x = \frac{\sin x}{\cos x}$ to explain why the graph has a vertical asymptote at $x = \frac{\pi}{2}$ and a zero at $x = 0$.



8. Graph $\cos x$ and $\sec x$ on the same graph and state what you notice.



9. Identify whether this is the graph for $\sin^{-1}(x)$ or $\cos^{-1}(x)$ and how you know (can't just say used calculator).



10. Find the exact value of each (no decimals). Sketch a picture if necessary.

$$\arcsin\left(\frac{1}{2}\right)$$

$$\tan^{-1}\left(\frac{-1}{\sqrt{3}}\right)$$

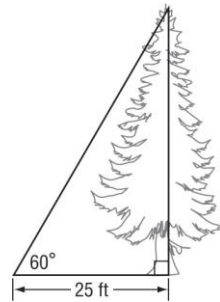
11. Find the exact value of each (no decimals, leave as fractions). Sketch a picture if necessary and use the ranges of the inverse trig functions to determine the correct answer.

$$\sin^{-1}(\sin(\pi/6))$$

$$\cos(\sin^{-1}(3/5))$$

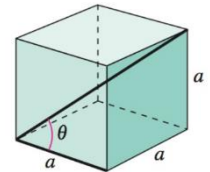
$$\sec(\sin^{-1}(3/5))$$

12. Find the height of the tree to the nearest tenth of a foot.



13. At a loading dock, a ramp is 55 feet long (this is how far you would walk if you walked up it). The ramp also has a height of 8 feet. Find the angle the ramp makes with the ground.

14. Determine the angle between the diagonal of a cube and its edge, as shown.



15. A passenger in an airplane flying at an altitude of 37,000 ft sees two towns as shown in the figure. How far apart are the towns?

