

Name: Key

Period:

Date:

Practice Worksheet: Graphs of Trig Functions

True or False

- | | | | |
|---|---|---|--|
| 1] <u>F</u>
Changing the period of a sine function changes its domain. | 2] <u>T</u>
Changing the vertical displacement of a cosecant function changes its range. | 3] <u>T</u>
Changing the phase shift of a tangent function changes its domain. | 4] <u>F</u>
Changing the vertical stretch of a cotangent function changes its domain. |
|---|---|---|--|

Analyze the equation to determine the features of the graph of each function.

<p>5] $y = 3 \sin 2x - 4$</p> <p>amplitude: 3 period: $\frac{2\pi}{2} = \pi$</p> <p>phase shift: None</p> <p>vertical displacement: down 4</p> <p>reflection: None</p>	<p>6] $y = -4 \cos \frac{1}{3}x$</p> <p>amplitude: 4 period: $\frac{2\pi}{\frac{1}{3}} = 6\pi$</p> <p>phase shift: None</p> <p>vertical displacement: None</p> <p>reflection: over x-axis</p>	<p>7] $y = 5 \csc \left(x - \frac{\pi}{3}\right) + 2$</p> <p>vertical stretch/shrink: 5</p> <p>phase shift: R $\frac{\pi}{3}$ period: 2π</p> <p>vertical displacement: up 2</p> <p>reflection: None</p>
<p>8] $y = 7 \sec 4 \left(x + \frac{\pi}{4}\right) - 1$</p> <p>vertical stretch/shrink: 7</p> <p>phase shift: L $\frac{\pi}{4}$ period: $\frac{2\pi}{4} = \frac{\pi}{2}$</p> <p>vertical displacement: down 1</p> <p>reflection: None</p>	<p>9] $y = 4 \tan \frac{2}{3}x + 6$</p> <p>vertical stretch/shrink: 4</p> <p>phase shift: None period: $\frac{\pi}{\frac{2}{3}} = \frac{3\pi}{2}$</p> <p>vertical displacement: up 6</p> <p>reflection: None</p>	<p>10] $y = \frac{1}{2} \cot(-x) + 1$</p> <p>vertical stretch/shrink: $\frac{1}{2}$</p> <p>phase shift: None period: π</p> <p>vertical displacement: up 1</p> <p>reflection: over y-axis</p>

Fill in the blanks to complete the table.

	Function	Vertical Stretch/Shrink	Period	Phase Shift	Vertical Displacement	Equation
11]	cosine	2	4π	left $\frac{3\pi}{2}$	up 4	$y = 2 \cos \frac{1}{2} \left(x + \frac{3\pi}{2}\right) + 4$
12]	sine	5	$\frac{2\pi}{3}$	none	up 2	$y = 5 \sin 3(x) + 2$
13]	tangent	15	$\frac{\pi}{4} = 4\pi$	R $\frac{\pi}{2}$	down 10	$y = 15 \tan \frac{1}{4} \left(x - \frac{\pi}{2}\right) - 10$
14]	secant	$\frac{1}{3}$	$\frac{\pi}{3}$	None	None	$y = \frac{1}{3} \sec 6x$
15]	cosecant	5	2π	Left $\frac{\pi}{6}$	up 1	$y = 5 \csc \left(x + \frac{\pi}{6}\right) + 1$
16]	cotangent	none	3π	right $\frac{\pi}{8}$	none	$y = \cot \frac{1}{3} \left(x - \frac{\pi}{8}\right)$

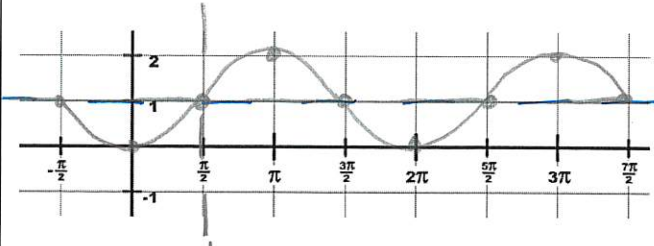
$3\pi = \frac{\pi}{b}$
 $b = \frac{1}{3}$

Identify the features of the graph, then sketch the graph NEATLY using PENCIL.

17] $y = \sin\left(x - \frac{\pi}{2}\right) + 1$ Reflection: *None*

Amplitude: *1* Period: 2π

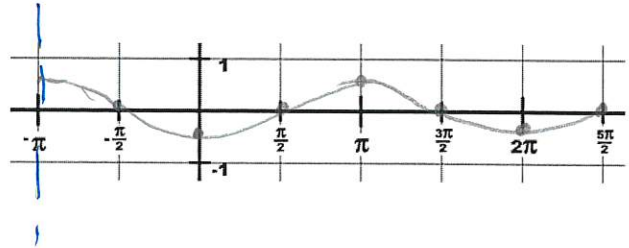
Phase shift: *R $\frac{\pi}{2}$* Vertical displacement: *up 1*



18] $y = \frac{1}{2}\cos(x + \pi)$ Reflection: *None*

Amplitude: $\frac{1}{2}$ Period: 2π

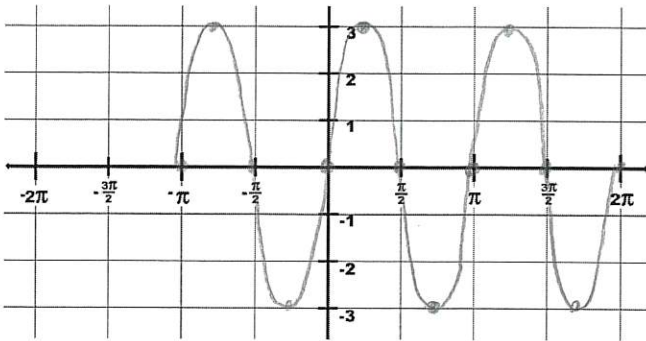
Phase shift: *L π* Vertical displacement: *None*



19] $y = 3\sin 2x$ Reflection: *None*

Amplitude: *3* Period: $\frac{2\pi}{2} = \pi$

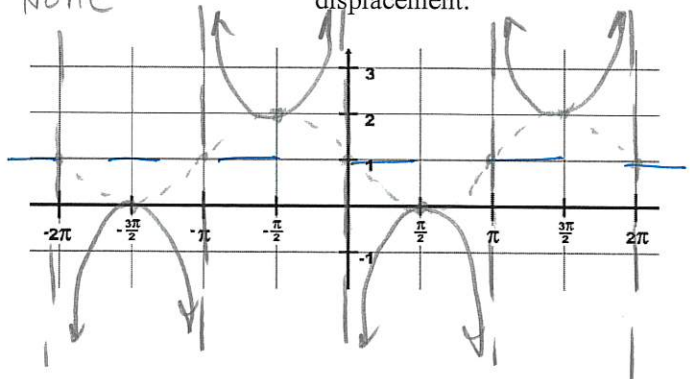
Phase shift: *None* Vertical displacement: *None*



20] $y = -\csc x + 1$ Reflection: *over x-axis*

Vertical Stretch/Shrink: *1* Period: 2π

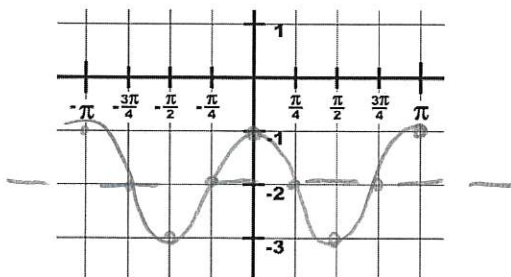
Phase shift: *None* Vertical displacement: *up 1*



21] $y = \cos 2x - 2$ Reflection: *None*

Amplitude: *1* Period: $\frac{2\pi}{2} = \pi$

Phase shift: *None* Vertical displacement: *down 2*



22] $y = -\tan \frac{1}{2}x$ Reflection: *x-axis*

Vertical Stretch/Shrink: *1* Period: $\frac{\pi}{1/2} = 2\pi$

Phase shift: *None* Vertical displacement: *None*

