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Name _____ Per _

Trigonometry Proficiency Check (Sec 2.4-2.5)

1. Write the equation of a cosine function with amplitude of 3, period of π and vertical shift of -2.

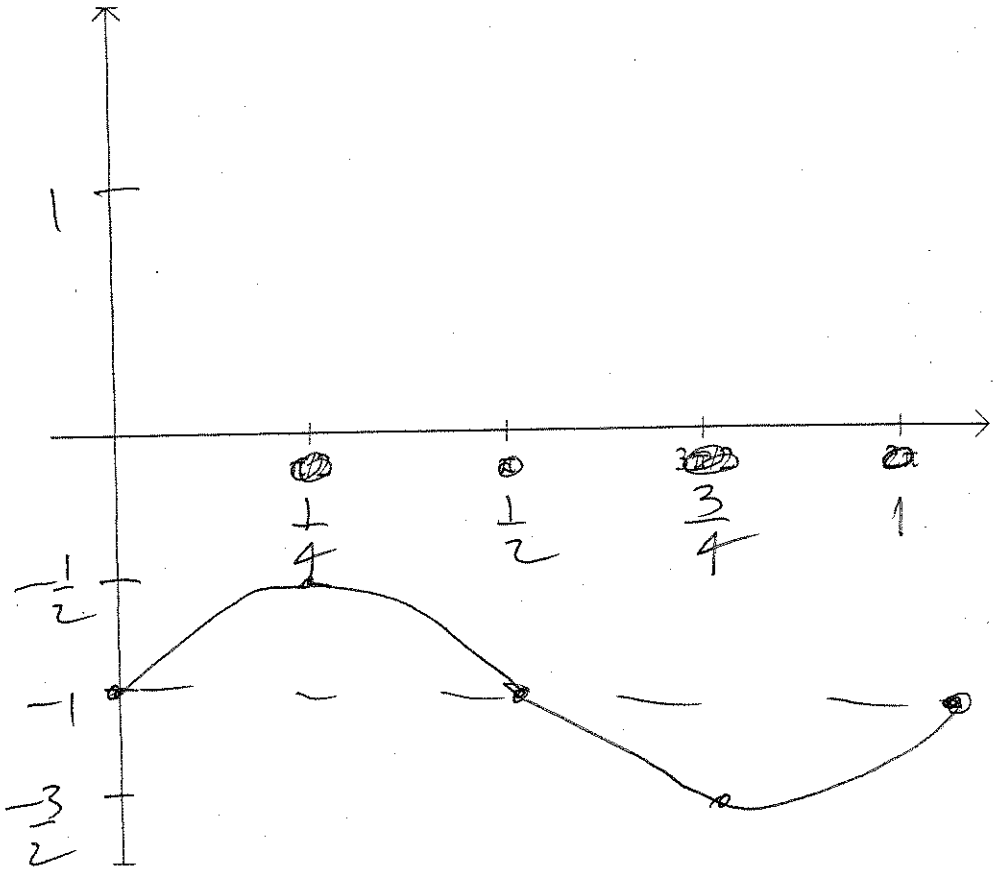
$y = 3\cos(2x) - 2$

2 $\pi = \frac{2\pi}{B}$ $B = 2$

2. Graph the function over one period. Label all key values on both axes. Graph over one period.

$$y = \frac{1}{2}\sin(2\pi x) - 1$$

$T = 1$



4

D-axis
max
D-axis
min
D-axis

$\sqrt{3} \approx 1.7 \quad \frac{\sqrt{3}}{3} \approx 0.6$

(3.) $y = 2\tan(4x)$ $\quad T = \frac{\pi}{4}$

$x = 0 \quad y = 0$

$x = \frac{\pi}{24} \quad y = 2\tan(\frac{\pi}{6}) = 2(\frac{\sqrt{3}}{3}) \approx 1.2$

$x = \pi/6 \quad y = 2\tan(\frac{\pi}{4}) = 2$

$x = \pi/12 \quad y = 2\tan(\frac{\pi}{3}) = 2\sqrt{3} \approx 3.4$

$x = \pi/8 \quad y$ undefined

(not to scale)

3
2
1
0
-1
-2
-3

$\frac{\pi}{24}$ $\frac{\pi}{16}$ $\frac{\pi}{12}$ $\frac{\pi}{8}$ $\frac{\pi}{6}$ $\frac{3\pi}{16}$ $\frac{5\pi}{24}$ $\frac{\pi}{4}$

$\frac{\pi}{6}$ $\frac{\pi}{4}$ $\frac{\pi}{3}$ $\frac{\pi}{2}$ $\frac{2\pi}{3}$ $\frac{3\pi}{4}$

$x = \frac{\pi}{6} \quad y = 2\tan\frac{2\pi}{3} \approx -2\sqrt{3} \approx$

$x = \frac{3\pi}{16} \quad y = 2\tan(\frac{3\pi}{4}) \approx -3.4$

$x = \frac{5\pi}{24} \quad y = 2\tan\frac{5\pi}{6} = -\frac{2\sqrt{3}}{3} \approx -1.2$

$x = \pi/4 \quad y = 2\tan\pi = 0$

④ $y = -\cot(x) + 1$

$\sqrt{3} \approx 1.7$ $\quad \frac{\sqrt{3}}{3} \approx 0.6$

$x = \pi/6$ $\quad -\cot(\frac{\pi}{6}) + 1 = -\sqrt{3} + 1 \approx -.7$

VA are at $x = 0$ and $x = \pi$

$x = \pi/4$ $\quad -\cot(\pi/4) + 1 = 0$

$x = \pi/3$ $\quad -\cot(\pi/3) + 1 = -\frac{\sqrt{3}}{3} + 1 \approx .4$

$x = \pi/2$ $\quad -\cot(\pi/2) + 1 = 0 + 1 = 1$

$x = 2\pi/3$ $\quad -\cot(2\pi/3) + 1 \quad \frac{\sqrt{3}}{3} + 1 \approx 1.6$

$x = 3\pi/4$ $\quad -\cot(3\pi/4) + 1 = 1 + 1 = 2$

$x = 5\pi/6$ $\quad -\cot(5\pi/6) + 1 = 1 + \sqrt{3} \approx 2.7$