

Name _____ Score _____/10

Please Print Clearly**The following may be helpful**

$$\sin(0) = 0 \quad \sin\left(\frac{\pi}{6}\right) = \frac{1}{2} \quad \sin\left(\frac{\pi}{4}\right) = \frac{1}{\sqrt{2}} \quad \sin\left(\frac{\pi}{3}\right) = \frac{\sqrt{3}}{2} \quad \sin\left(\frac{\pi}{2}\right) = 1$$

$$\cos(0) = 1 \quad \cos\left(\frac{\pi}{6}\right) = \frac{\sqrt{3}}{2} \quad \cos\left(\frac{\pi}{4}\right) = \frac{1}{\sqrt{2}} \quad \cos\left(\frac{\pi}{3}\right) = \frac{1}{2} \quad \cos\left(\frac{\pi}{2}\right) = 0$$

$$\cos(x - y) = \cos(x)\cos(y) + \sin(x)\sin(y)$$

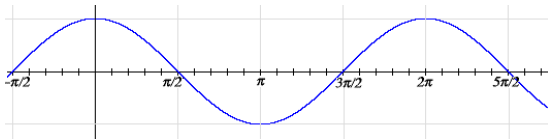
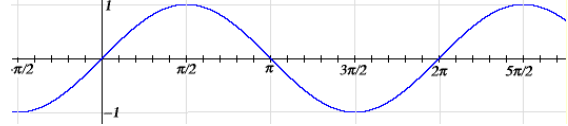
$$\sin(x - y) = \sin(x)\cos(y) - \cos(x)\sin(y)$$

$$\cos(x + y) = \cos(x)\cos(y) - \sin(x)\sin(y)$$

$$\sin(x + y) = \sin(x)\cos(y) + \cos(x)\sin(y)$$

$$\sin(2x) = 2\sin(x)\cos(x)$$

$$\cos(2x) = \cos^2(x) - \sin^2(x) = 1 - 2\sin^2(x) = 2\cos^2(x) - 1$$

Graph of The Cosine Function:**Graph of The Sine Function:**

1. Without a calculator. Calculate the exact value of $\sin(105^\circ)$. Show your work neatly.

2. Based on the graph shown at the right, how many solutions are there to the equation

$$\sin(x) = 0.004x - 0.25 ?$$

Read the next question carefully!

Mark the solutions for the above equation with a big, heavy, easy to see dots.

Make your dots about this size ●

