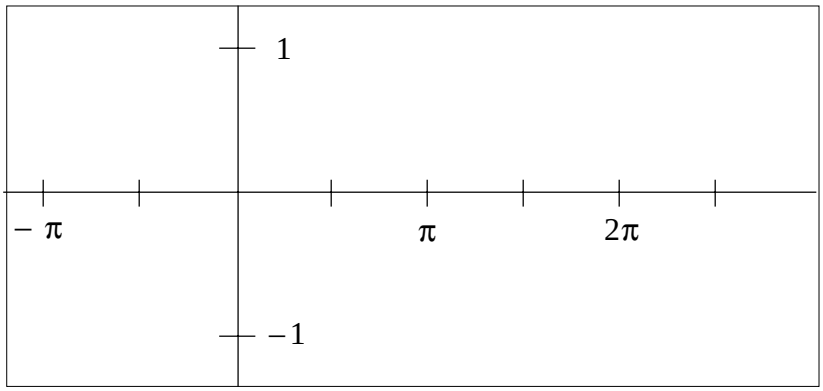
I For each of the following problems, draw and label an axis about 2 inches high and 4 inches long like this:



Plot the coordinates. Draw a smooth curve through the points. No straight lines and no sharp corners are allowed!

1) $(-\pi, 0)$ $\left(-\frac{\pi}{2}, -1\right)$ $(0, 0)$ $\left(\frac{\pi}{2}, 1\right)$ $(\pi, 0)$ $\left(\frac{3\pi}{2}, -1\right)$ $(2\pi, 0)$

2) $(-\pi, -1)$ $\left(-\frac{\pi}{2}, 0\right)$ $(0, 1)$ $\left(\frac{\pi}{2}, 0\right)$ $(\pi, -1)$ $\left(\frac{3\pi}{2}, 0\right)$ $(2\pi, 1)$

3) $(-\pi, 0)$ $\left(-\frac{\pi}{2}, -\frac{1}{2}\right)$ $(0, 0)$ $\left(\frac{\pi}{2}, \frac{1}{2}\right)$ $(\pi, 0)$ $\left(\frac{3\pi}{2}, -\frac{1}{2}\right)$ $(2\pi, 0)$

II A) Draw an axis labeled along the x-axis from $-\pi$ to 3π and along the y-axis from -2 to $+2$. Use the following domain values to create a list of coordinates for each of the functions. Plot the points for all functions on the one graph. Use a different color for each function.

$$x \in \left\{-\pi, -\frac{\pi}{2}, 0, \frac{\pi}{2}, \pi, \frac{3\pi}{2}, 2\pi, \frac{5\pi}{2}, 3\pi\right\}$$

$$f(x) = \cos x \; ; \quad g(x) = 2\cos x \; ; \quad h(x) = \frac{1}{2}\cos x$$

B) Draw an axis labeled along the x-axis from $-\pi$ to 3π and along the y-axis from -2 to $+2$. Use the following domain values to create a list of coordinates for each of the functions. Plot the points for all functions on the one graph. Use a different color for each function. (A calculator may be helpful. Decimal values may be used.

$$x \in \left\{-\pi, -\frac{2\pi}{3}, -\frac{\pi}{2}, -\frac{\pi}{3}, -\frac{\pi}{4}, 0, \frac{\pi}{4}, \frac{\pi}{3}, \frac{\pi}{2}, \frac{2\pi}{3}, \pi, \frac{5\pi}{4}, \frac{4\pi}{3}, \frac{3\pi}{2}, \frac{7\pi}{3}, 2\pi, \frac{5\pi}{2}, 3\pi\right\}$$

$$f(x) = \cos x \; ; \quad g(x) = \cos 2x \; ; \quad h(x) = \cos 3x$$

C) Draw an axis labeled along the x-axis from $-\pi$ to 3π and along the y-axis from -2 to $+2$. Use the following domain values to create a list of coordinates for each of the functions. Plot the points for all functions on the one graph. Use a different color for each function. (A calculator may be helpful. Decimal values may be used.

$$x \in \left\{-\pi, -\frac{2\pi}{3}, -\frac{\pi}{2}, -\frac{\pi}{3}, -\frac{\pi}{4}, 0, \frac{\pi}{4}, \frac{\pi}{3}, \frac{\pi}{2}, \frac{2\pi}{3}, \pi, \frac{5\pi}{4}, \frac{4\pi}{3}, \frac{3\pi}{2}, \frac{7\pi}{3}, 2\pi, \frac{5\pi}{2}, 3\pi\right\}$$

$$f(x) = \sin x - 1 \; ; \quad g(x) = \sin x \; ; \quad h(x) = \sin x + 1$$