MA 180 Graphs of Sinusoidal Functions
Section 5.4

Definitions:

- The ***amplitude*** of the functions $f(x) = A\sin(\omega x)$, $f(x) = A\cos(\omega x)$ is $|A|$.
- The ***period*** of the functions $f(x) = A\sin(\omega x)$, $f(x) = A\cos(\omega x)$ is $\frac{2\pi}{\omega}$. The period represents the distance along the x-axis required for one full cycle of the function.

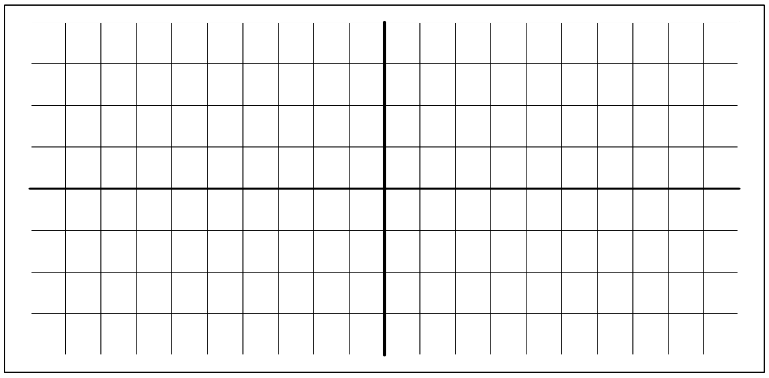
1. Let $f(x) = 2\cos(3x)$.

(a) What are the amplitude and period of this function?

amplitude: period:

(b) Where does the function cross the x-axis?

(d) Sketch a graph of the function, showing the intercepts and points where the function has maximum and minimum values. Your graph should contain at least one full period.



2. Find a function of the form $f(x) = A\sin(\omega x)$ or $f(x) = A\cos(\omega x)$ whose graph is given. The x-axis window is $[-2\pi, 2\pi]$ with an x-scale of $\frac{\pi}{4}$ and the y-axis window is [-3,3] with a y-scale of 1.