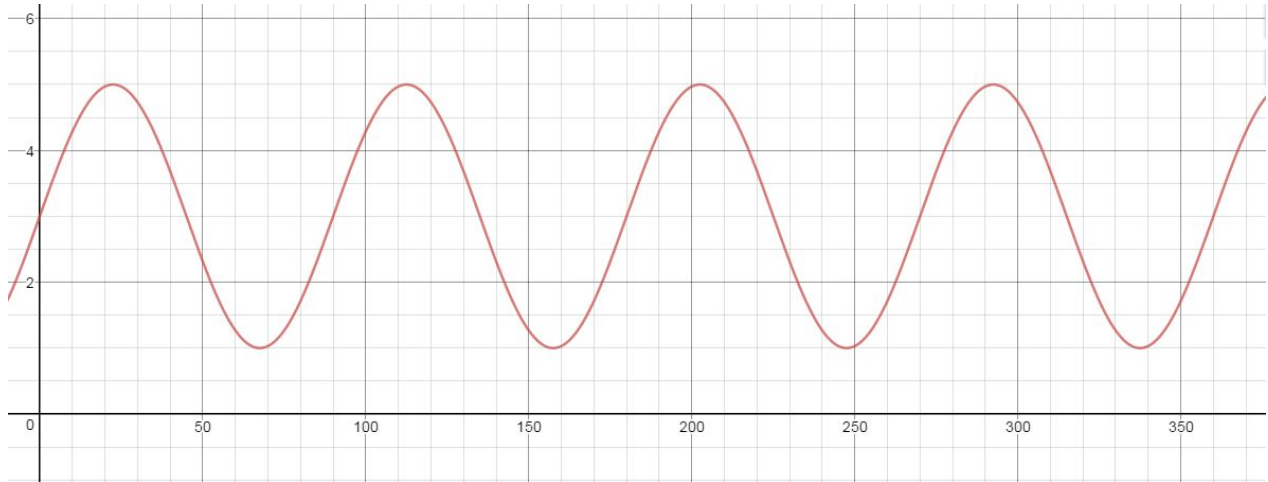
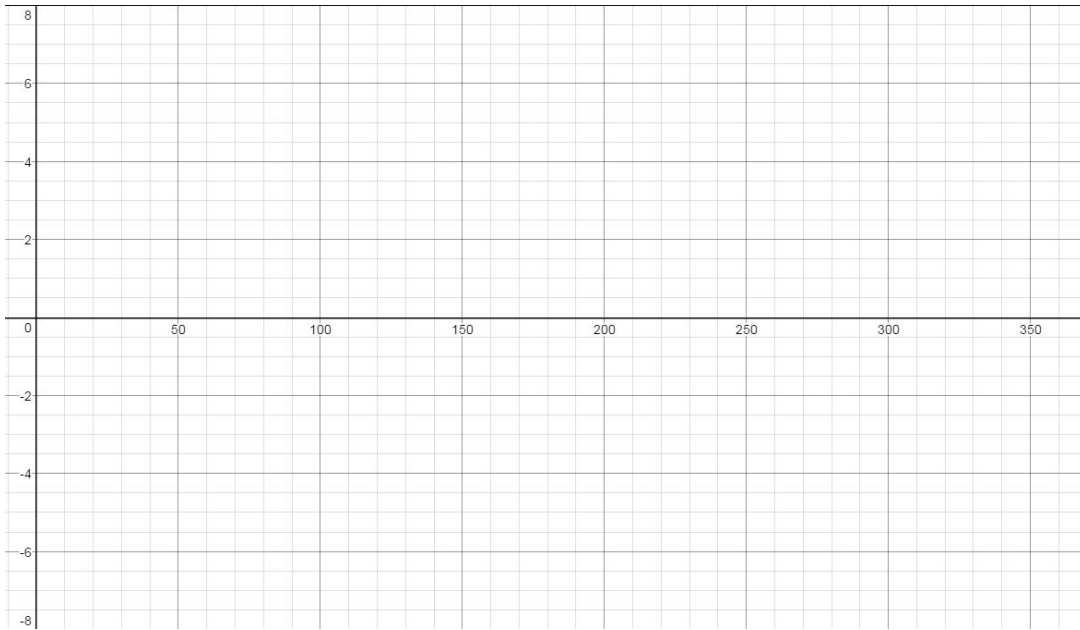


1. For the graph below,
 - a. Draw the midline.
 - b. Label the coordinate points (x,y) of the maximum and minimum points.
 - c. Label the coordinate points where the curve crosses the midline.



- d. How can you use your drawing to find the
 - i. Amplitude?
 - ii. Frequency and Period?
 - iii. Vertical Translation (or Midline)?
 - e. What is the equation of the sine curve shown? In the form $f(x) = a \sin(b(x + c)) + d$
2. Consider the function $f(x) = 3 \sin(2x) - 1$
 - a. What is the Amplitude of the sine curve?
 - b. What is the Frequency and Period of the sine curve?
 - c. What is the Midline of the sine curve?
 - d. Write the range of the function in the form $\# \leq y \leq \#$.
 - e. What will be the coordinates (x,y) of first maximum point on the sine curve? The first minimum point? Recall that x = degrees and y = height.
 - f. What will be the coordinates (x,y) where the sine curve crosses the midline?

- g. On the axes below, Draw
- the midline
 - the points showing the first maximum and first minimum.
 - the points where the sine curve crosses the midline.



3. Use a strategy similar to #1 to find the equation for each sine curve shown below in the form $y = a \sin(b(x + c)) + d$.

