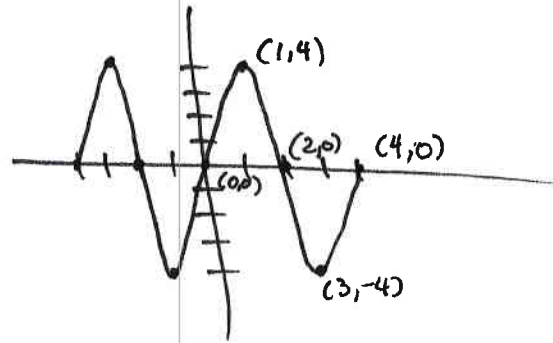


**Instructions:** Show all work. Use exact values for labels, even if you use decimal approximations to plot points on the graph.

1. Sketch at least one cycle of the graph of the function  $f(x) = 4 \sin\left(\frac{\pi x}{2}\right)$ . Clearly state the period, the amplitude, and plot no less than 5 key points.

Amplitude = 4  
 period =  $\frac{2\pi}{\frac{\pi}{2}} = 2\pi \cdot \frac{2}{\pi} = 4$   
 key points (0,0),  
 (1,4)  
 (2,0)  
 (3,-4)  
 (4,0)



2. Determine the equation of the graph shown below. The window dimensions on the graph are  $[-\pi, \pi; \pi/4] \times [-4, 4; 1]$ .

$f(x) = -3 \cos(2x)$   
 period =  $\pi$        $\frac{2\pi}{\pi} = 2$   
 $\omega = 2$   
 amplitude = 3 (flipped)  
 Starts at max (min) at 0  
 so cosine

