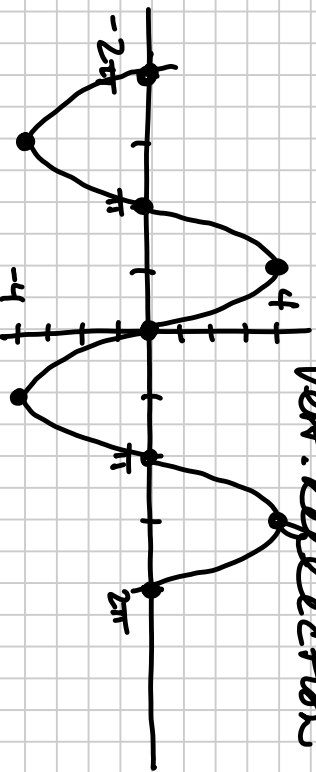


3.  $y = -4 \sin x$

$A = 4$

Vert. stretch  $y$ 's by 4  
Vert. Reflection

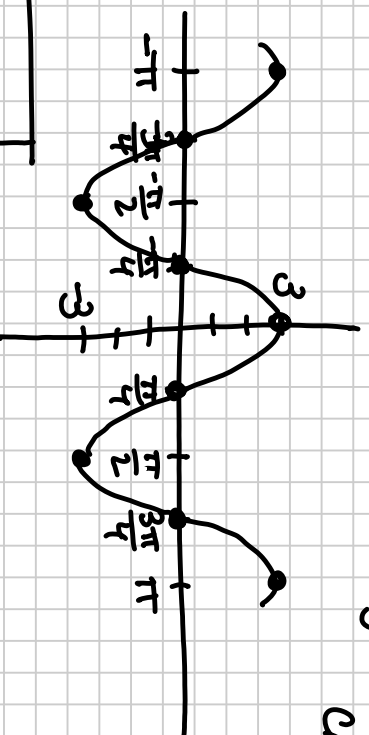


11.  $y = 3 \cos 2x$

$\text{Per} = \frac{2\pi}{2} = \pi$

$A = 3$  Vert. Stretch  $y \times 3$

Horshrink  $x$  by  $\frac{1}{2}$



Crit pts every  $\frac{\pi}{4}$

13.  $y = 3 \sin \frac{x}{2}$

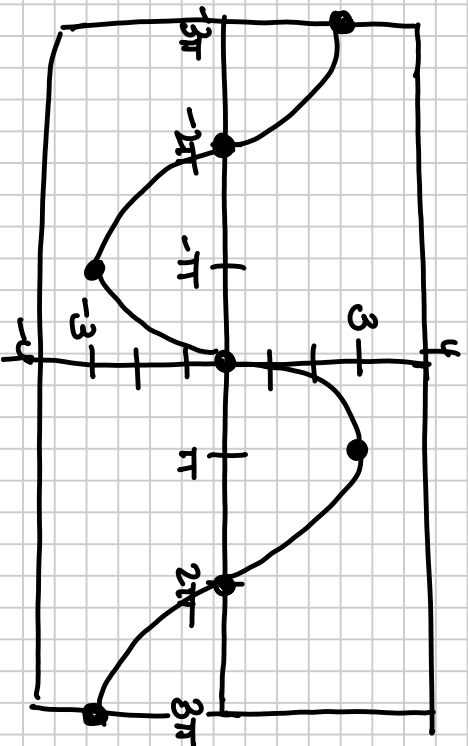
$A = 3$

$\text{Per} = \frac{2\pi}{\frac{1}{2}} = 4\pi$

$\text{Freq} = \frac{1}{2} \frac{1}{2\pi} = \frac{1}{4\pi}$

Crit pts every

$\frac{4\pi}{4} = \pi$



16.  $y = -4 \sin \frac{2x}{3}$

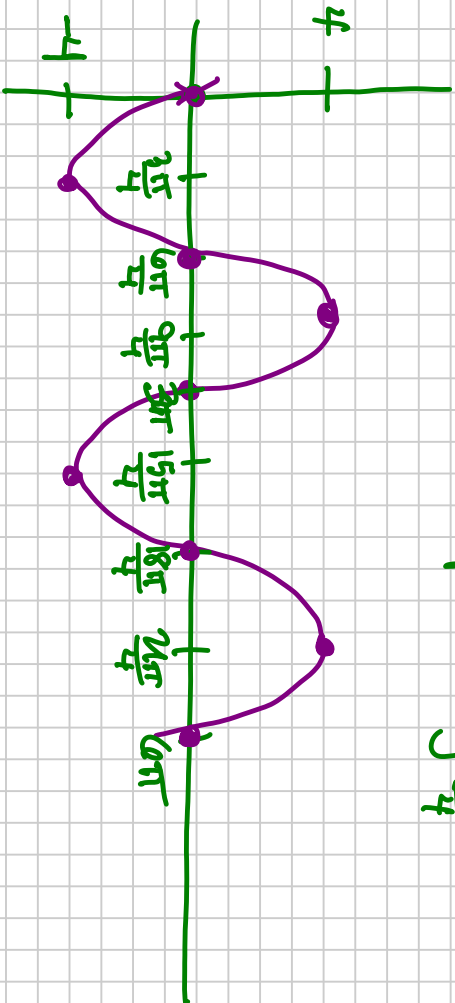
$A = 4$

vert. refl.

$B = \frac{2}{3}$

Per =  $\frac{2\pi}{\frac{2}{3}} = 2\pi \cdot \frac{3}{2} = 3\pi$

Crit pts every  $\frac{3\pi}{4}$



45.

$y = 2 \cos 2\pi x + 1$

$A = 2$

$B = 2\pi$

$D = 0$

Per =  $\frac{2\pi}{2\pi} = 1$

Crit pts every  $\frac{1}{4}$

