

Turn in homework:

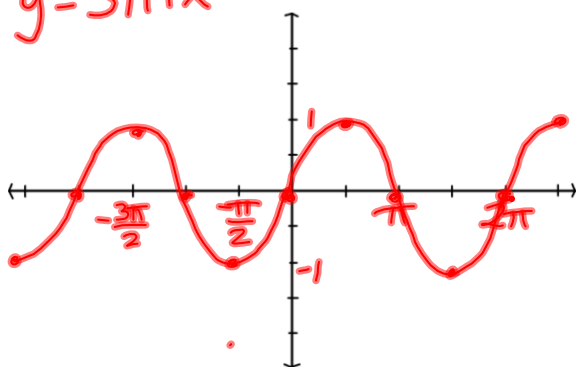
5.4 #61-79 odd

5 word problems from angular speed handout

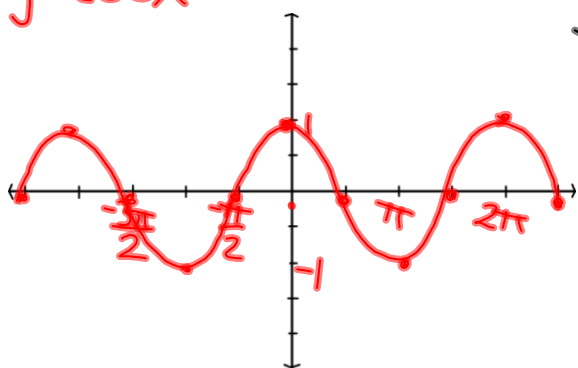
5.5 #1-6; 43-44; 49-54

Test #1 Practice Problems (handout)

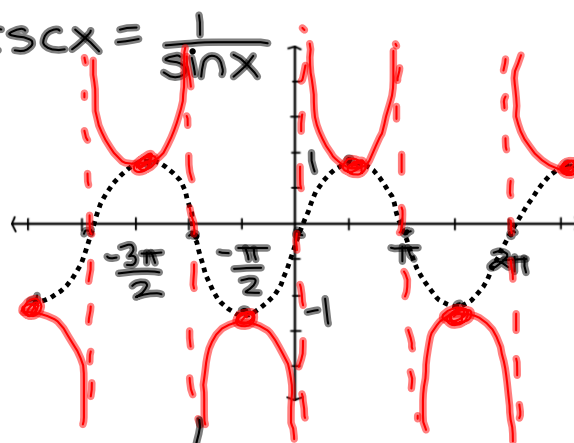
$$y = \sin x$$



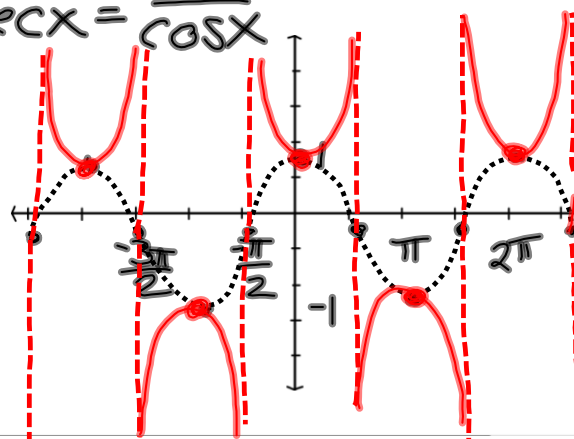
$$y = \cos x$$

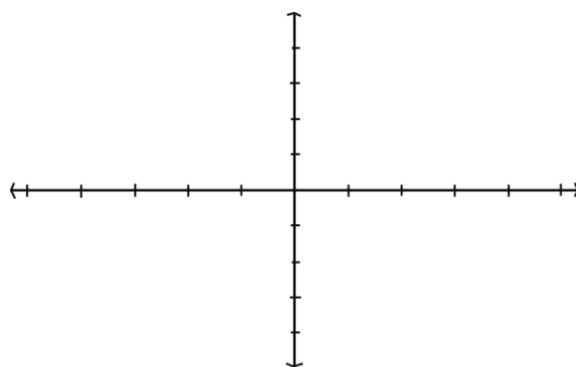
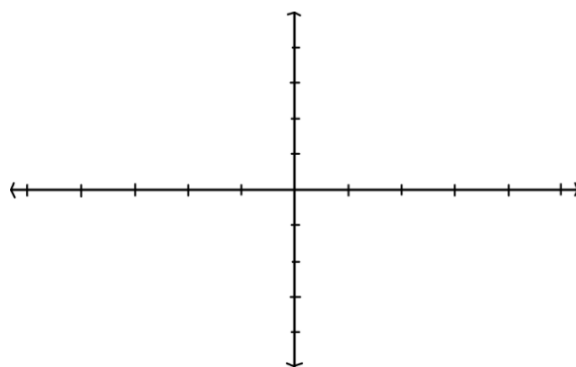
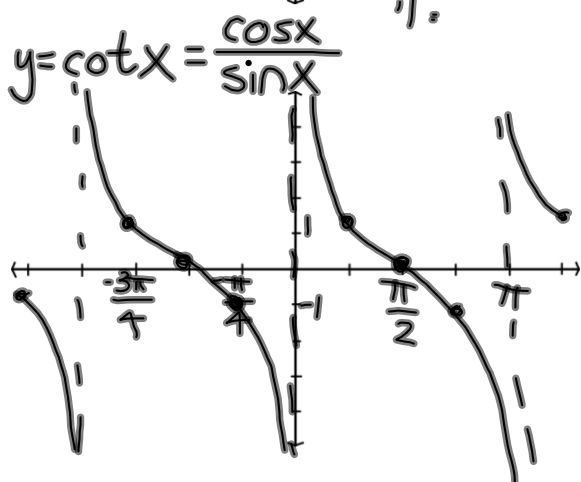
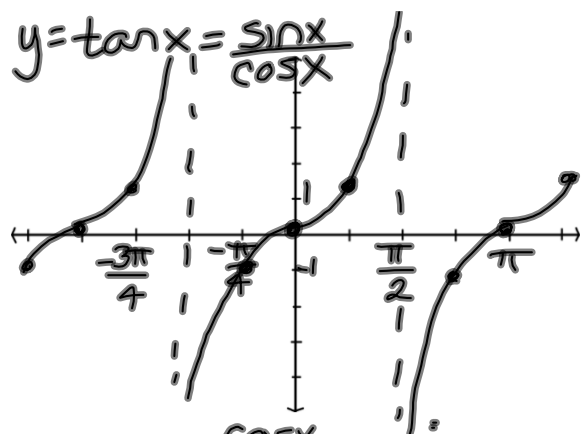


$$y = \csc x = \frac{1}{\sin x}$$



$$y = \sec x = \frac{1}{\cos x}$$





$$y = f(x)$$

Goal:

$$y = a f(bx + c) + d$$

$$y = f(x) + g(x)$$

$$y = a f(bx)$$

multiplication always results in a stretch of the graph.

constants applied outside the function affect it vertically as we expect; inside - horizontally, opposite of what we would expect

$$\text{amplitude} = \frac{\text{maxvalue} - \text{minvalue}}{2}$$

for  $y = a \sin bx$

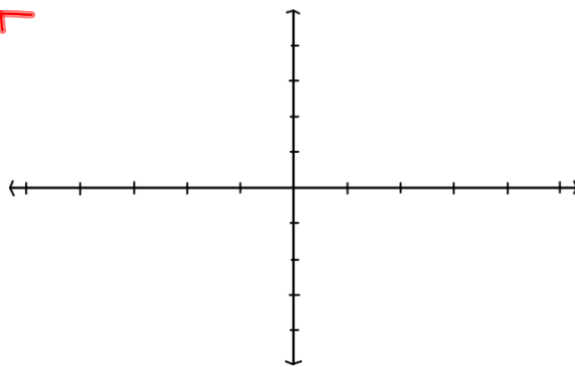
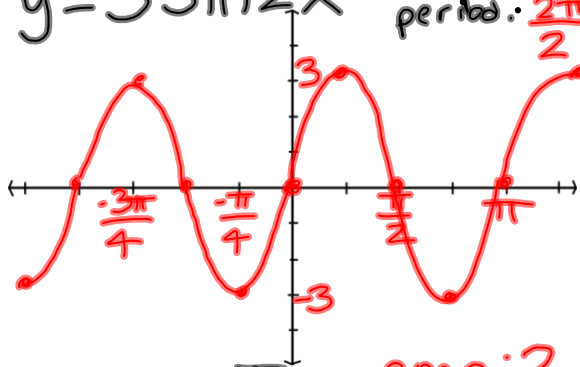
$$\underline{\text{amplitude}} = |a|$$

If  $a < 0$ , vertical flip

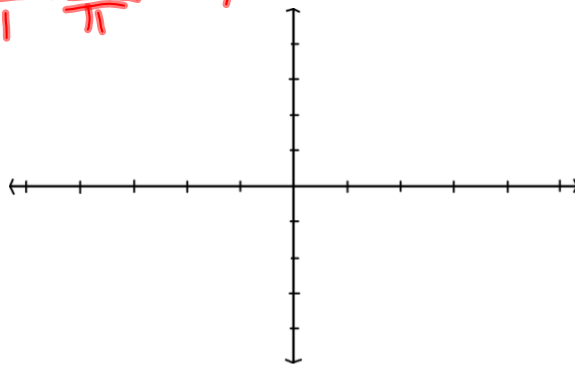
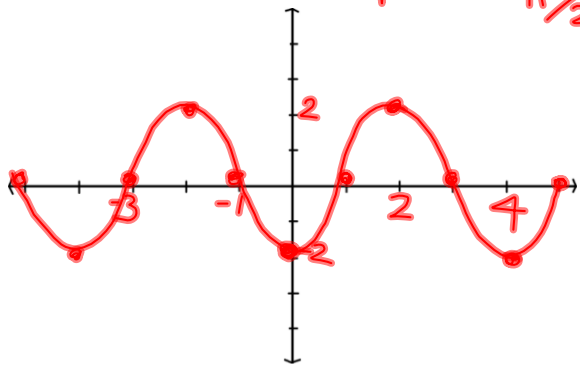
$$\underline{\text{period}} = \frac{\text{original period} (2\pi \text{ or } \pi)}{|b|}$$

If  $b < 0$ , horizontal flip

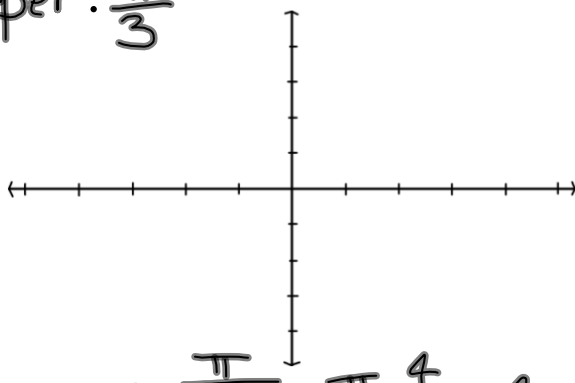
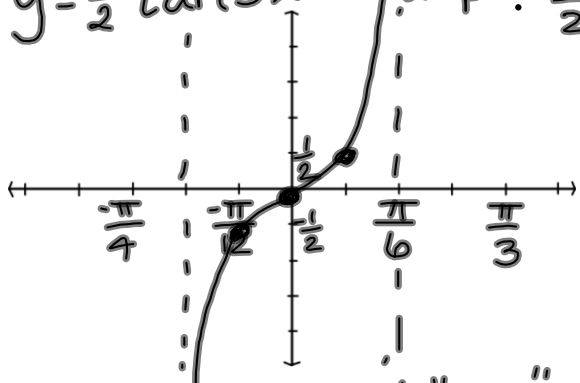
$y = 3 \sin 2x$  amp: 3  
 period:  $\frac{2\pi}{2} = \pi$



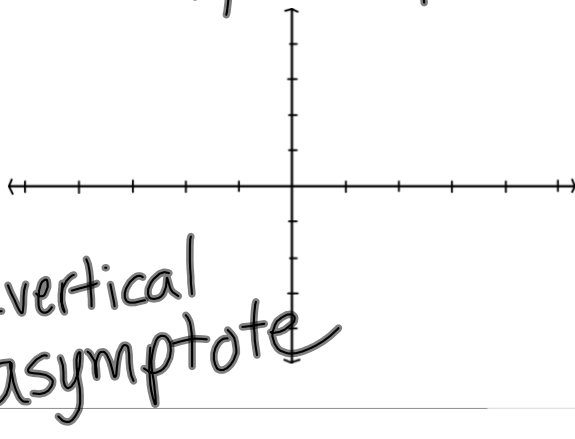
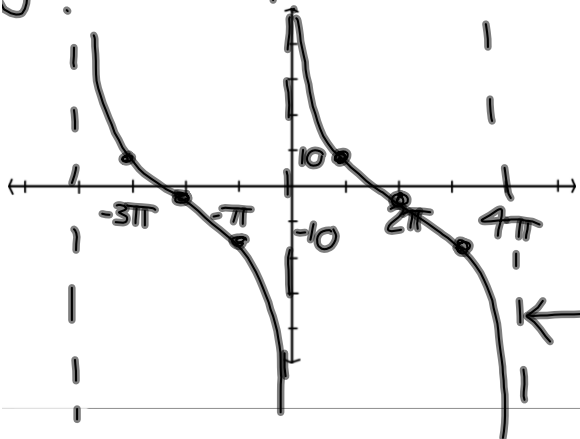
$y = -2 \cos \frac{\pi}{2}x$  amp: 2  
 per:  $\frac{2\pi}{\pi/2} = 2\pi \cdot \frac{2}{\pi} = 4$



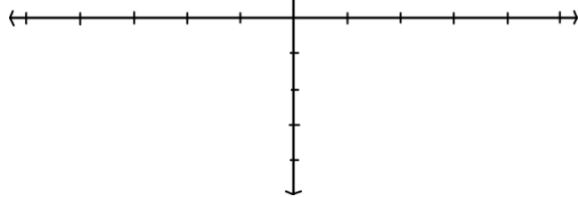
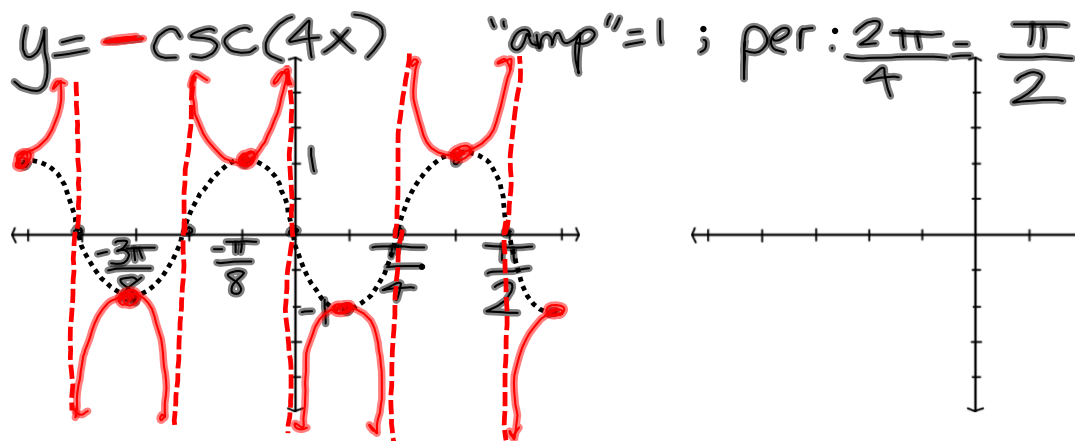
$y = \frac{1}{2} \tan 3x$  "amp": 1/2 per: π/3



$y = 10 \cot \frac{1}{4}x$  "amp" = 10; per =  $\frac{\pi}{1/4} = \pi \cdot \frac{4}{1} = 4\pi$



← vertical asymptote



HW:  
Graphs # 1-24  
on worksheet

