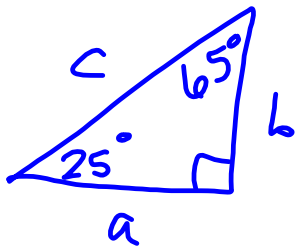
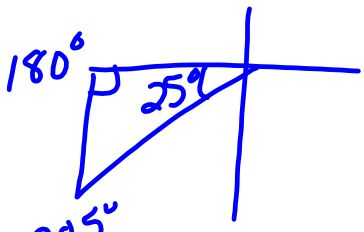
write in terms of $\sin 25^\circ$ / $\cos 25^\circ$.

19. $\sec 25^\circ = \frac{1}{\cos 25^\circ}$



20. $\cos 65^\circ = \sin 25^\circ$

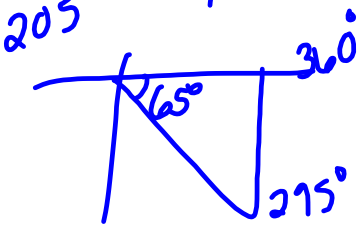
21. $\sin 205^\circ = -\sin 25^\circ$



22. $\csc 295^\circ = -\csc 65^\circ$

$= -\sec 25^\circ$

$= \frac{-1}{\cos 25^\circ}$



23. $s = 4\text{ in}$; $\theta = 9^\circ$; $r = ?$ (in)

$s = r\theta$; $r = \frac{s}{\theta}$

$r = \frac{4\text{ in}}{9^\circ} \cdot \frac{20}{\frac{180^\circ}{\pi}} = \boxed{\frac{80}{\pi}\text{ in}}$

24. $r = 30\text{ in}$; $V = 60\text{ mi/h}$; $\omega = ?$ $\left(\frac{\text{rev}}{\text{min}}\right)$

$V = r\omega \Rightarrow \omega = \frac{V}{r} = \frac{V}{1} \cdot \frac{1}{r}$

$\omega = \frac{60\text{ mi}}{\text{h}} \cdot \frac{1}{30\text{ in}} \cdot \frac{12\text{ in}}{1\text{ ft}} \cdot \frac{5280\text{ ft}}{1\text{ mi}} \cdot \frac{1\text{ h}}{60\text{ min}} \cdot \frac{1\text{ rev}}{2\pi}$

$= \boxed{\frac{1056}{\pi}\ \frac{\text{rev}}{\text{min}}}$

126720 rad/h

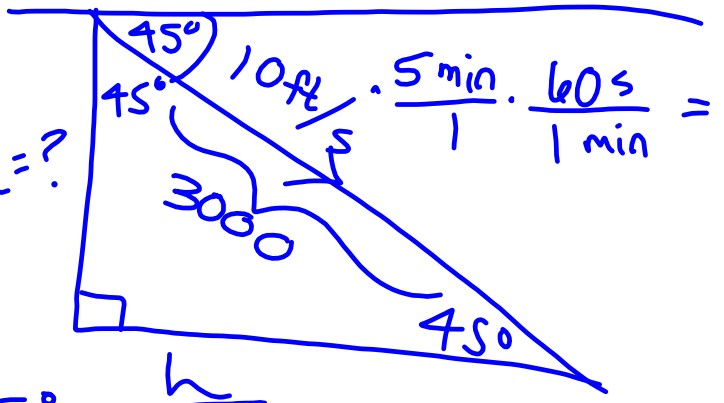
2112 rad/min

$\frac{63360}{\pi}$ rev/h

380160 deg/min

$\frac{176}{5}$ rad/s $\quad \frac{88}{5\pi}$ rev/s

25.



$10\text{ ft/s} \cdot \frac{5\text{ min}}{1} \cdot \frac{60\text{ s}}{1\text{ min}} = 3000\text{ ft}$

$\sin 45° = \frac{h}{3000}$

$h = 3000 \sin 45°$

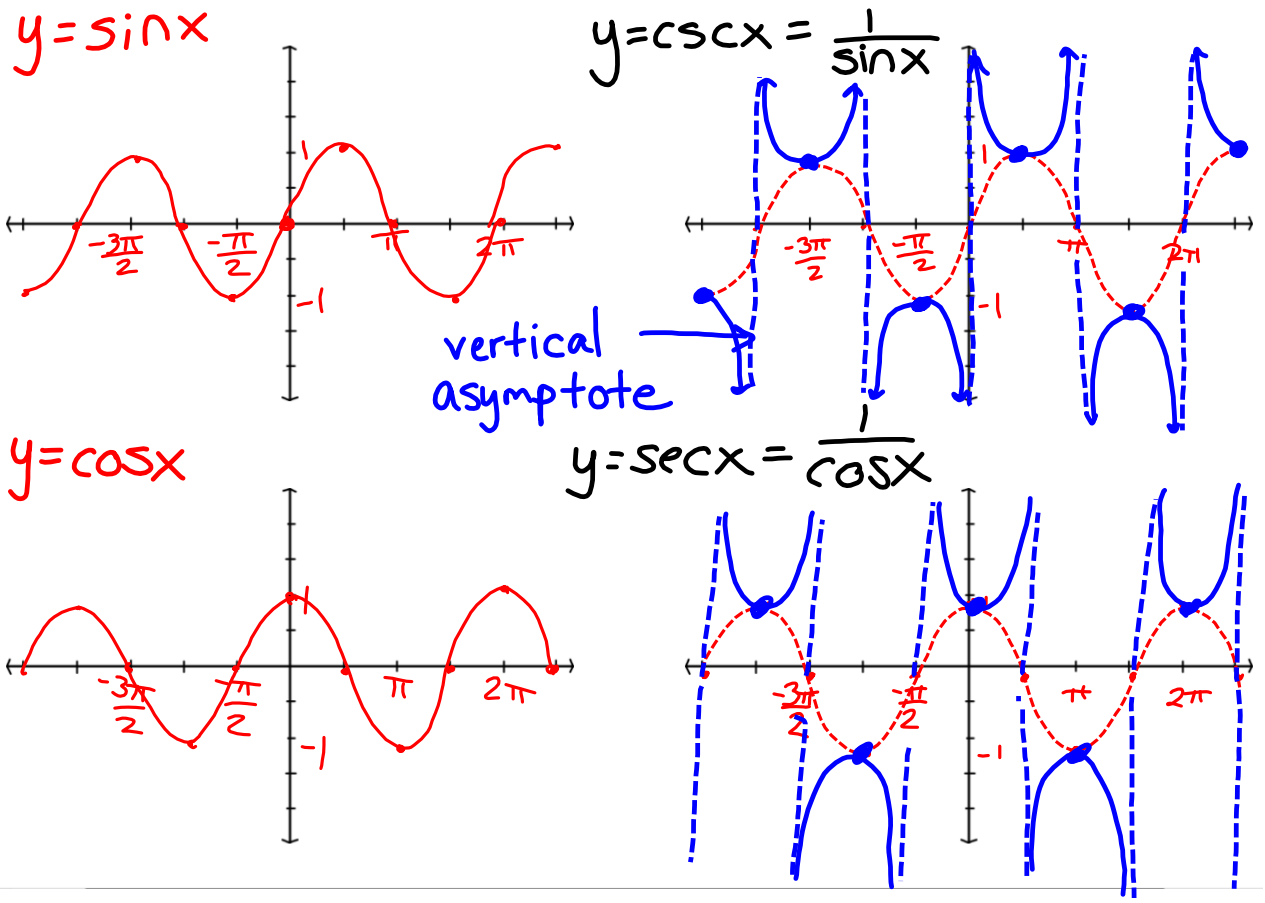
$= 3000 \cdot \frac{1}{\sqrt{2}}$

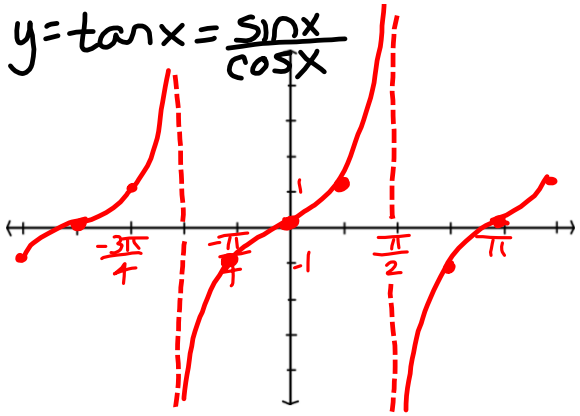
$= \frac{3000}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \boxed{1500\sqrt{2}\text{ ft}}$

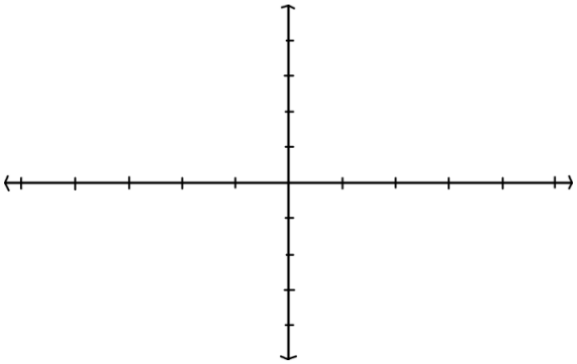
A. even

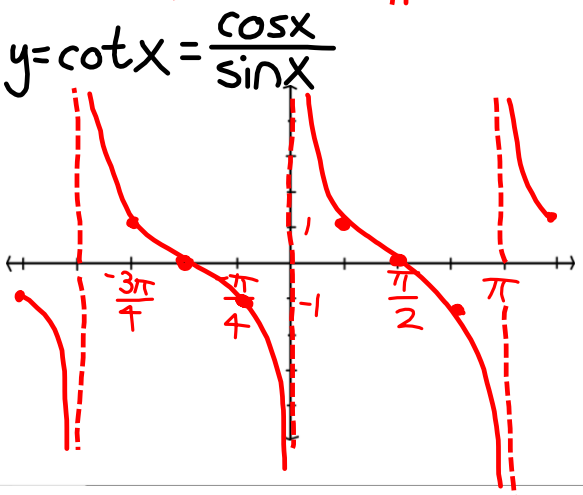
B. $-\cot x$

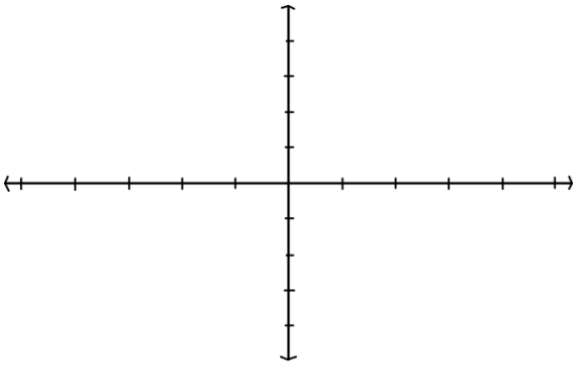
C. $\frac{180}{\pi}$ rot/h











$y = f(x)$

Goal:

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

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

$y = af(bx)$

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

$$\text{amplitude} = \frac{\text{max value} - \text{min value}}{2}$$

for $y = a \sin bx$

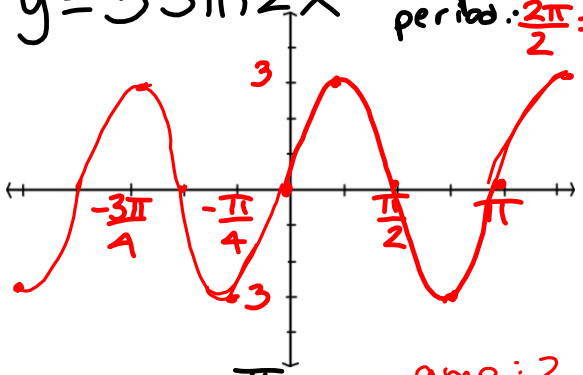
$\underline{\text{amplitude}} = |a|$

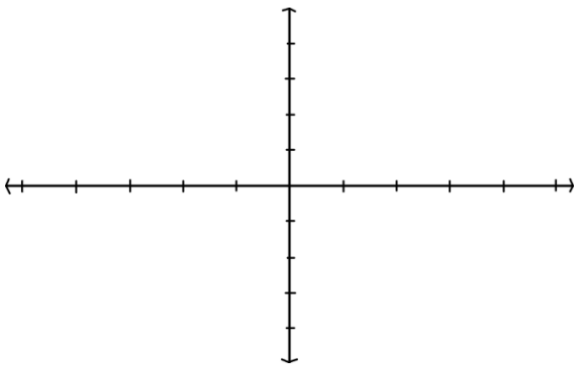
If $a < 0$, vertical flip

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

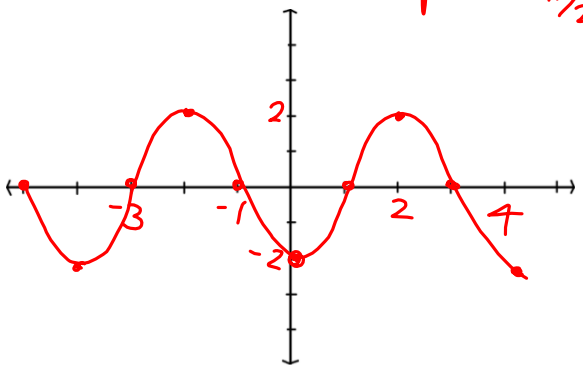
If $b < 0$, horizontal flip

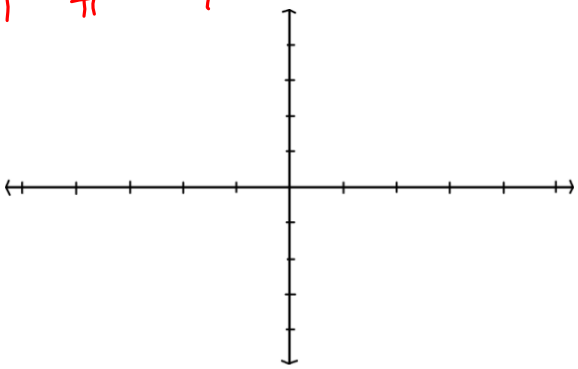
$y = 3\sin 2x$ amp: 3, period: $\frac{2\pi}{2} = \pi$



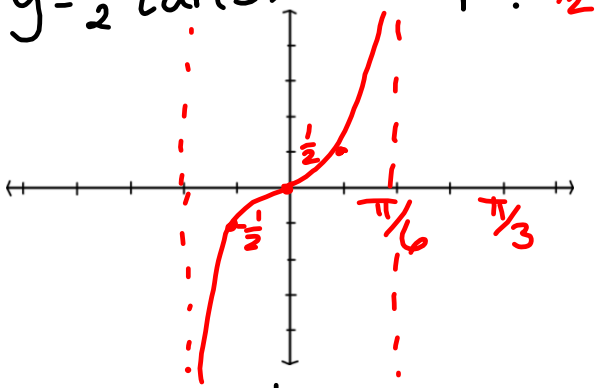


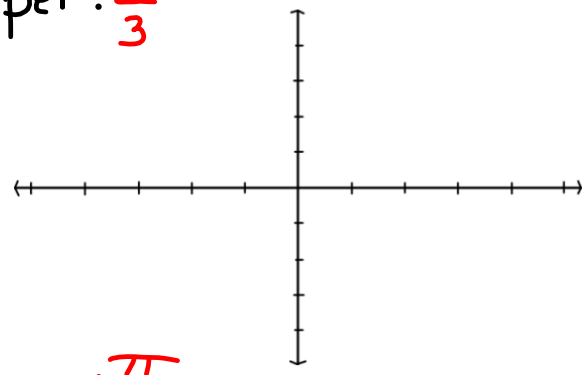
$y = -2\cos\frac{\pi}{2}x$ amp: 2, per: $\frac{2\pi}{\pi/2} = \frac{2\pi}{1}\cdot\frac{2}{\pi} = 4$



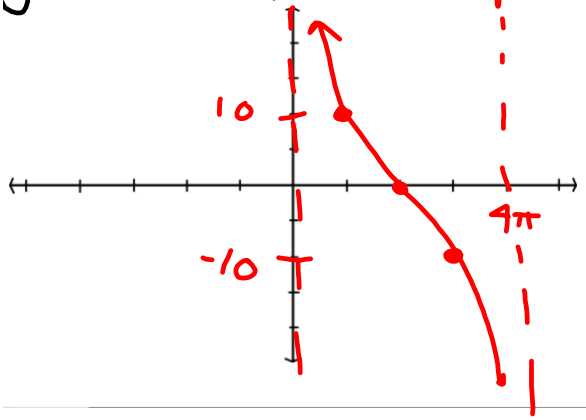


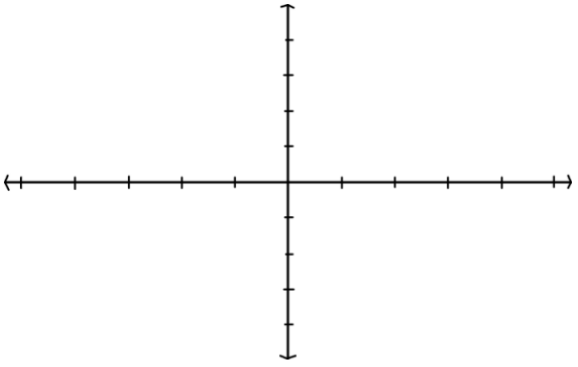
$y = \frac{1}{2}\tan 3x$ "amp": $\frac{1}{2}$ per: $\frac{\pi}{3}$





$y = 10\cot\frac{1}{4}x$ amp: 10, per: $\frac{\pi}{1/4} = 4\pi$





HW:
Graphs # 1-24
on worksheet