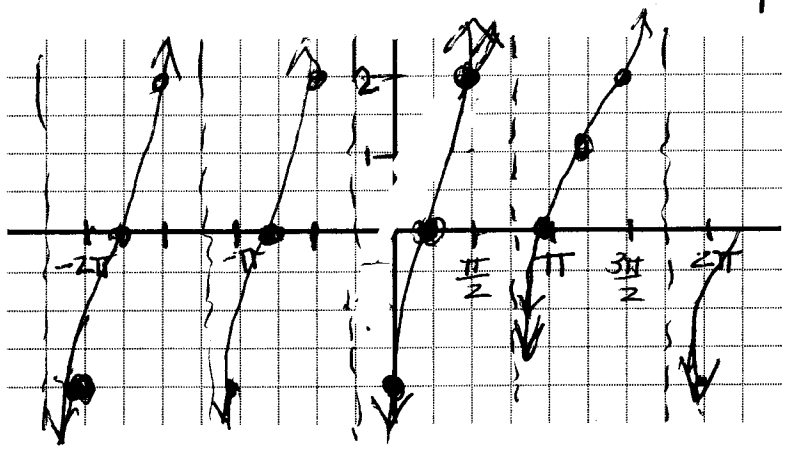
Precalculus Unit 5 Homework—Graphing Other Trig Functions

Graph the function over two periods. Begin your graph at a horizontal shift (as required). Don't forget to label your axes. * Some graphs have more than 2 periods!

1) $f(x) = 2\tan\left(x - \frac{\pi}{4}\right)$

right $\frac{\pi}{4}$

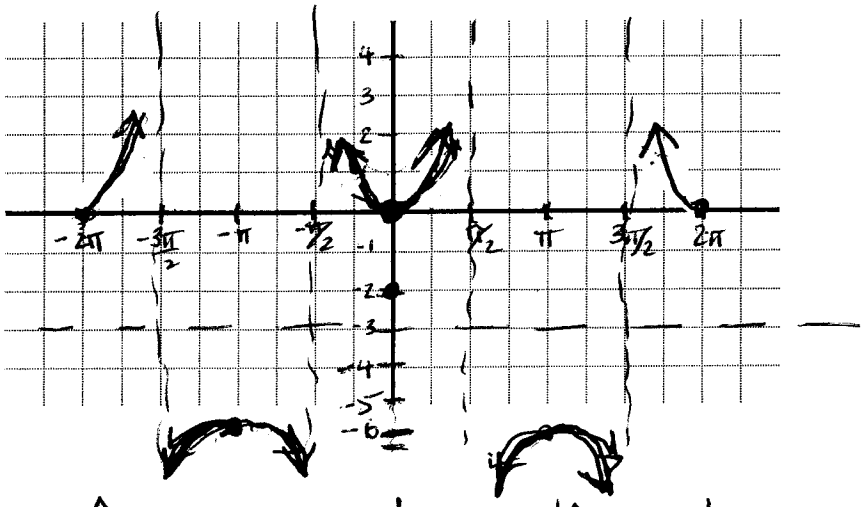
vertical stretch * 2



2) $f(t) = 3\sec t - 3$

vertical stretch * 3

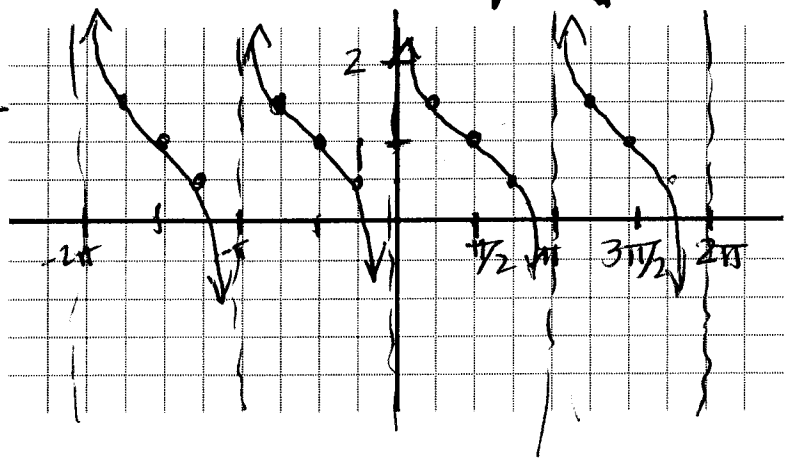
shift down 3



3) $f(x) = \frac{1}{2}\cot x + 1$

vertical shrink * $\frac{1}{2}$

shift up 1



Describe the transformations on each parent function.

4) $g(x) = -6\tan 2\left(x + \frac{\pi}{4}\right) - 2$

horiz. shrink * $\frac{1}{2}$

horiz shift left $\pi/4$

Vert. stretch * 6

reflect over x-axis

5) $f(t) = \csc 2t + 2$

horiz. shrink * $\frac{1}{2}$

shift up 2

6) $h(x) = -\cot(x + \frac{1}{2}\pi)$

shift left $\pi/2$

reflect over x-axis

More Practice with Graphs & Equations of Sinusoids

1. What is the domain and range of the cosine function? D: $(-\infty, \infty)$ R: $[-1, 1]$	2. What is the domain and range of the sine function? D: $(-\infty, \infty)$ R: $[-1, 1]$
3. What kind of function is the sine function? Odd, even or neither? odd	4. What kind of function is the cosine function? Odd, even or neither? even
5. State the amplitude, period, phase shift and vertical shift of the function $f(t) = -2\sin(3t - \pi/2) + 4 = -2\sin\left[3\left(t - \frac{\pi}{6}\right)\right] + 4$ amp = 2 p.s. = $\frac{\pi}{6}$ per = $\frac{2\pi}{3}$ v.s. = 4	6. State the amplitude, period, phase shift and vertical shift of the function $f(t) = 4\cos(\frac{1}{2}t - 4) - 6 = 4\cos\left[\frac{1}{2}(t - 8)\right] - 6$ amp = 4 p.s. = 8 per = 4π v.s. = -6
7. State the amplitude, period, phase shift and vertical shift of the function $f(t) = \cos(4t + 3) - 12 = \cos\left[4\left(t + \frac{3}{4}\right)\right] - 12$ amp = 1 p.s. = $-\frac{3}{4}$ per = $\frac{\pi}{2}$ v.s. = -12	8. State the amplitude, period, phase shift and vertical shift of the function $f(t) = -\frac{1}{4}\sin(t + \pi) + 6$ amp = $\frac{1}{4}$ p.s. = $-\pi$ per = 2π v.s. = 6
9. State the amplitude, period, phase shift and vertical shift of the function $f(t) = \frac{1}{2}\cos(\frac{1}{4}t) - 2$ amp = $\frac{1}{2}$ p.s. = none per = 8π v.s. = -2	10. State the amplitude, period, phase shift and vertical shift of the function $f(t) = -\sin(2t + \pi/2) = -\sin\left[2\left(t + \frac{\pi}{4}\right)\right]$ amp = 1 p.s. = $-\pi/4$ per = π v.s. = none