RECALL. For $C>0$, the graph of $f(x+C)$ is the graph of $f(x)$ shifted $C$ units to the left. $f(x-C)$ is the graph of $f(x)$ shifted $C$ units to the right. The phase shift is the amount $C$ subtracted from $x$. $f(x+C) = f(x-(-C))$ has phase shift $-C$. $f(2x-C) = f(2(x-C/2))$ has phase shift $C/2$.

- **Graph $y = \sin(x-\pi/2)$**. Phase shift $= \pi/2$.

To graph $y = A\sin(Bx \pm D)$:
- Factor out $B$, and rewrite in the form $A\sin[B(x \pm D)]$:
  $A\sin[B(x \pm D)] \rightarrow A\sin[B(x \pm (D/B))] \rightarrow A\sin[B(x-C)]$.
- Graph $y = \sin(Bx)$, stretch vertically to get $y = A\sin(Bx)$.
- Shift horizontally to get $y = A\sin[B(x-C)]$.

- **Graph $y = \sin(2x-\pi)$ over one period.** $\sin(2x-\pi) = \sin[2(2x-\pi/2)]$. Phase shift $= \pi/2$.

- **Graph $-2\cos(2x-\pi/2)$ over one period.** $-2\cos(2x-\pi/2) = -2\cos[2(x-\pi/4)]$. Amplitude $= 2$, period $= \pi$, phase shift $= \pi/4$.

- **Graph $y = \csc(x)$**. $\csc(x) = 1/\sin(x)$. To graph csc($x$), graph $\sin(x)$ and then invert its values. $\sin(x) = 1/2 \Rightarrow \csc(x) = 1/(1/2) = 2$. $\sin(x) = 0 \Rightarrow \csc(x) = 1/0 = \text{undef}$.

- **Graph $y = -\tan(3x + \pi/2)$**. $-\tan(3x + \pi/2) = -\tan[3(x+(-\pi/6))].$ Phase shift $= -\pi/6$. Graph $\tan(x)$, $\tan(3x)$, $-\tan(3x)$, then shift left by $\pi/6$. $\tan(x)$ undef. iff $\cos(x) = 0$ iff $x = ..., -\pi/2, \pi/2, 3\pi/2, ...$ vert. asymptotes: $..., x = -\pi/2, x = \pi/2, x = 3\pi/2, ...$ 

- **Graph $y = -\csc(3x + \pi)$ over one period.**