HPC **Section 4.5 Day 2** **Name:**
Notes **Graphing Sine and Cosine w/Transformations**

General Form of a Trigonometric Function:

$a =$ $b =$ $c =$ $d =$

Find the amplitude, period, phase shift and vertical shift of each function and graph two full periods of the function.

Example 1: $y = 2\sin 4\left(x + \frac{\pi}{4}\right)$

Amplitude:

Period:

Phase Shift:

Vertical Shift:

Example 2: $y = -\sin(\pi x - \pi) + 1$

Amplitude:

Period:

Phase Shift:

Vertical Shift:

Example 3: $y = 2\cos\left(2x - \frac{\pi}{2}\right) - 1$

Amplitude:

Period:

Phase Shift:

Vertical Shift:

Example 4: $y = -\cos\left(\frac{x}{2} - \frac{\pi}{2}\right) + 2$

Amplitude:

Period:

Phase Shift:

Vertical Shift:

HPC **Section 4.5 Day 2** **Name:**
HW Worksheet **Graphing Sine and Cosine w/Transformations**

Find the amplitude, period, phase shift and vertical shift of each function and graph two full periods of the function.

1. $y = 3\cos\left(x + \frac{\pi}{4}\right)$

Amplitude:

Period:

Phase Shift:

Vertical Shift:

2. $y = 4\sin 2\left(x + \frac{\pi}{2}\right)$

Amplitude:

Period:

Phase Shift:

Vertical Shift:

3. $y = -\frac{1}{2}\cos x - 3$

Amplitude:

Period:

Phase Shift:

Vertical Shift:

4. $y = 2\cos\frac{1}{2}(x - \pi)$

Amplitude:

Period:

Phase Shift:

Vertical Shift:

5. $y = 5\sin\frac{1}{3}x + 1$

Amplitude:

Period:

Phase Shift:

Vertical Shift:

6. $y = \sin \pi x - 1$

Amplitude:

Period:

Phase Shift:

Vertical Shift:

7. $y = -8\cos(x + \pi)$

Amplitude:

Period:

Phase Shift:

Vertical Shift:

8. $y = -2\sin(4x + \pi)$

Amplitude:

Period:

Phase Shift:

Vertical Shift:

9. $y = 3\cos\left(\frac{\pi x}{2} - \frac{\pi}{2}\right) - 3$

Amplitude:

Period:

Phase Shift:

Vertical Shift: