

## Catch the Wave!

For each of the following Trigonometric Functions, state the amplitude, period length, phase shift, vertical shift and any reflections. In the space provided, use a table of values and mapping notation to graph each of the following graphs for the domains given. Show all of your work for full marks and state the range of each function.

1)  $y = 3 \sin 2\theta - 4$        $0 \leq \theta \leq 2\pi$

amplitude \_\_\_\_\_

period length \_\_\_\_\_

phase shift \_\_\_\_\_

vertical shift \_\_\_\_\_

reflections \_\_\_\_\_

2)  $y = -2 \cos\left(-\theta - \frac{\pi}{2}\right)$        $-\pi \leq \theta \leq \pi$

amplitude \_\_\_\_\_

period length \_\_\_\_\_

phase shift \_\_\_\_\_

vertical shift \_\_\_\_\_

reflections \_\_\_\_\_

3)  $y = -3 \sin\left(\frac{1}{2}\theta - \pi\right) + 2$        $-2\pi \leq \theta \leq 2\pi$

amplitude \_\_\_\_\_

period length \_\_\_\_\_

phase shift \_\_\_\_\_

vertical shift \_\_\_\_\_

reflections \_\_\_\_\_

4)  $y = \frac{1}{2} \cos\left(3\theta + \frac{\pi}{4}\right) - 1$

amplitude \_\_\_\_\_

period length \_\_\_\_\_

phase shift \_\_\_\_\_

vertical shift \_\_\_\_\_

reflections \_\_\_\_\_



