

GRAPHS OF CIRCULAR FUNCTIONS HOMEWORK SHEET.

Due date: _____

1. Sketch the graph of each of the following for one complete cycle stating the amplitude, period and range.

(a) $y = 1 + 3 \cos 2x$

(b) $y = \frac{1}{2} \sin\left(\frac{1}{4}\theta\right)$

(c) $y = -\cos(3x) - 2$



2. State the maximum and minimum values for each of the following:

(a) $y = 7 \sin\left(x - \frac{\pi}{3}\right) + 6$

(b) $y = \frac{1}{2} \cos(x + \pi) - \frac{7}{2}$

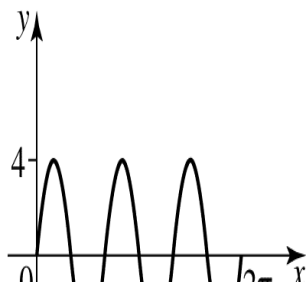
(c) $y = 2 - 5 \cos\left(x - \frac{\pi}{6}\right)$

3. Find the new equations when each of the following graphs undergoes the translations described.

(a) $y = 5 \cos(x)$ is translated $\frac{\pi}{3}$ units to the right and 4 units down.

(b) $y = -3 \sin(x)$ is translated $\frac{\pi}{4}$ units to the left and 3 units up.

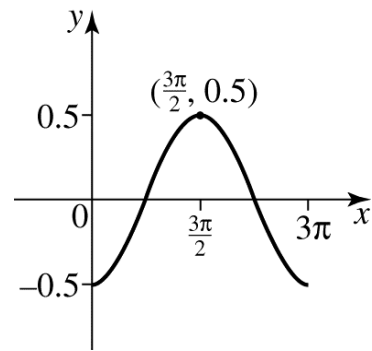
4.



The graph above shows a function of the form $y = a \sin nx$. Determine the values of a and n .

5.

The graph on the right shows a graph of the form $y = a \cos(nx)$. Determine the values of a and n . State the amplitude, period and range.



6. Determine the equation in the form $y = a \cos(nx) + b$, if the amplitude is 6, there is an upward shift of 2 and the period is 8.