

### Written Assignment 3

1. Carefully graph the following:

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

2. Carefully verify the following identities (Remember to use correct logic so you might want to check the videos):

(a)  $\sin(\theta) \sec(\theta) = \tan(\theta)$

(b)  $(1 - \sin^2 \theta)(1 + \tan^2 \theta) = 1$

(c)  $(1 - \cos \theta)(1 + \sec \theta) \cot \theta = \sin \theta$

(d)  $\csc^2 x(1 - \cos^2 x) = 1$

(e)  $\tan \theta - \csc \theta \sec \theta(1 - 2 \cos^2 \theta) = \cot \theta$

(f)  $\frac{\sin x + \tan x}{\cot x + \csc x} = \sin x \tan x$