1. Take the following parametric equations.

$$x(t) = -\sec t \ , \quad y(t) = \tan t \ , \quad t \in \left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$$

(a) Use trigonometry and the Pythagorean Theorem to express this system in an equation that includes only y and x.

(b) Graph this system in the xy-plane, with the parameter residing in the open interval, $t \in \left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$. On the graph, label 4 points corresponding to the parameter values $t \in \left\{-\frac{\pi}{4}, 0, \frac{\pi}{4}, \frac{\pi}{3}\right\}$. Indicate the orientation of the curve associated with the ordering of the parameter, t.

(c) Indicate if there is any information about the curve that is lost or suppressed by using the result obtained in (a)