

Figure 1:

## Quiz \#12

1. (4 points) Sketch the curve given in polar coordinates by the equation $r=\sin (3 \theta)$ into the coordinate system above.
2. (6 points) Consider the curve given by $x(t)=3-5 t, y(t)=t^{2}-t+7$.
(a) At which points (if any) has the curve a horizontal tangent line?
(b) At which points (if any) has the curve a vertical tangent line?
(c) For which value of $t$ has the tangent line to the curve at the point $(x(t), y(t))$ slope equal to 2 ?
