MATH 243: SECTION 10.3 GROUPWORK

(1) Consider the following curves given by polar coordinate equations.

$$r^2 = 7$$
$$\theta = \pi/4$$

Determine Cartesian coordinate equations for the curves, and sketch their graphs.

(2) Consider the curve given by the Cartesian coordinate equation

$$9y = 4x.$$

Determine a polar coordinate equation for the curve, and sketch its graph.

(3) Consider the curve $(x^2+y^2)^{3/2} = 2xy$, given by Cartesian coordinates. Determine a polar coordinate equation for the curve, and use this equation to sketch a graph of the curve. [Hint: remember the trig identity $\sin(2\alpha) = 2\sin\alpha\cos\alpha$.]