3B Hyperbolas

1. The hyperbola H has equation
   $4x^2 - 9y^2 = 36$.
   a) Sketch H.

   b) Write down the equations of the asymptotes of H.

   c) Find parametric Equations for H.

2. A hyperbola H has parametric equations

$$x = 4\sec t, \qquad y = \tan t, \qquad -\pi \le t < \pi, \qquad t \ne \pm\frac{\pi}{2}$$

a) Find a Cartesian equation for H.

b) Sketch H.

c) Write down the equations of the asymptotes of H.