Math 338: Homework #3 (Conic sections)

#1 Verify that $\sqrt{(x+c)^2+y^2} + \sqrt{(x-c)^2+y^2} = 2a$

rationalizes to $\frac{x^2}{a^2} + \frac{y^2}{a^2-c^2} = 1$

#2. On a piece of graph paper, using a focus at (5,0) and directrix $x=0$, draw a conic section with excentricity

a) .2 b) .8 c) 1 d) 1.4 e) 5

3. Find the focus, excentricity and directrix of the ellipse $\frac{x^2}{9} + \frac{y^2}{16} = 1$

4.