2.   Graph the following and make sketches. (*zoom out to -20 by 20)*   Fill out the first *three* columns of the table (leave the last column blank for now). Continue to modify your hypothesis.

Equation	Type of Conic	Sketch	Discriminant
a) $x^2 + y = 0$			
b) $x^2 + xy + y = 0$			
c) $x^2 + xy + y^2 + y = 0$			
d) $x^2 + xy - y^2 + y = 0$			
e) $x^2 + 2xy + y^2 + y = 0$			
f) $x^2 + 2xy + 2y^2 + y = 0$			

3. Given the general equation: $Ax^2 + Bxy + Cy^2 + Dx + Ey + F = 0$, determine the value of $B^2 - 4AC$ for each of the equations above. Look for a pattern between the type of conic, and the value of the "discriminant".