Conic Sections HW **Name:**
Introduction to Calculus

1 Identify each conic section below as an ellipse, circle, hyperbola, or parabola.

a) $x^2 + 5y^2 = 12$

b) $2x^2 - 2y^2 = 6$

c) $x^2 = 12 - y^2$

d) $x^2 + (y-3)^2 = 16$

e) $3x^2 + y^2 - 2x + 6y = 10$

f) $12 = xy$

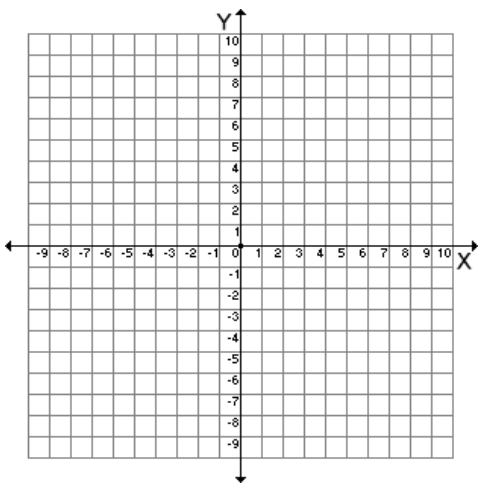
g) $2y^2 = x + 2$

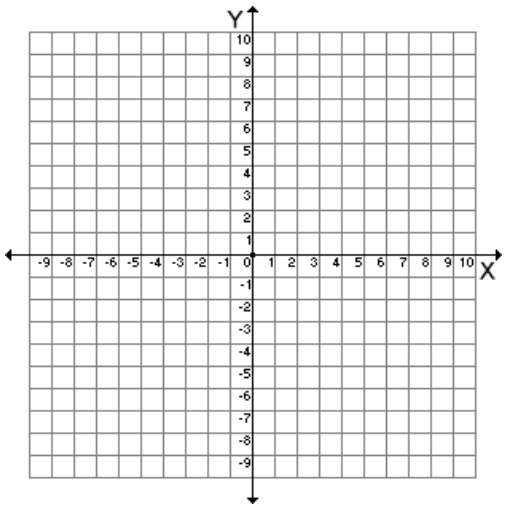
h) $8x^2 - 3y = 9 + y^2$

2 Sketch each conic section given. Clearly identify all x and y intercepts.

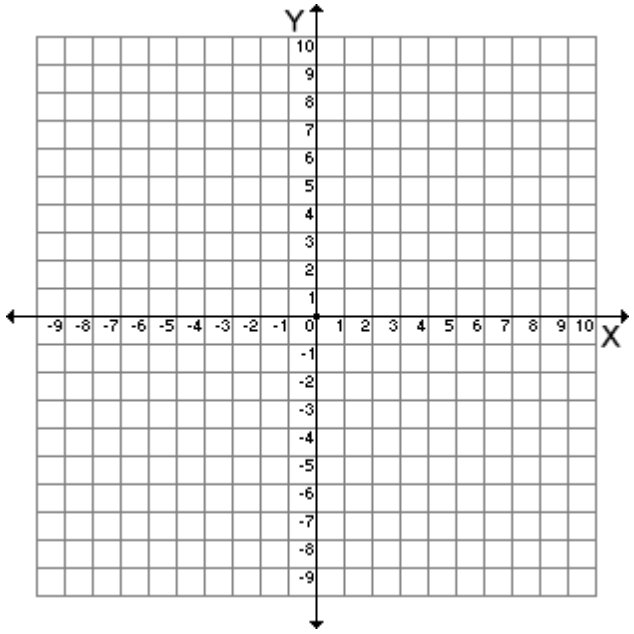
a) $x^2 + 2y^2 = 16$

b) Sketch $x^2 - 2y^2 = 36$

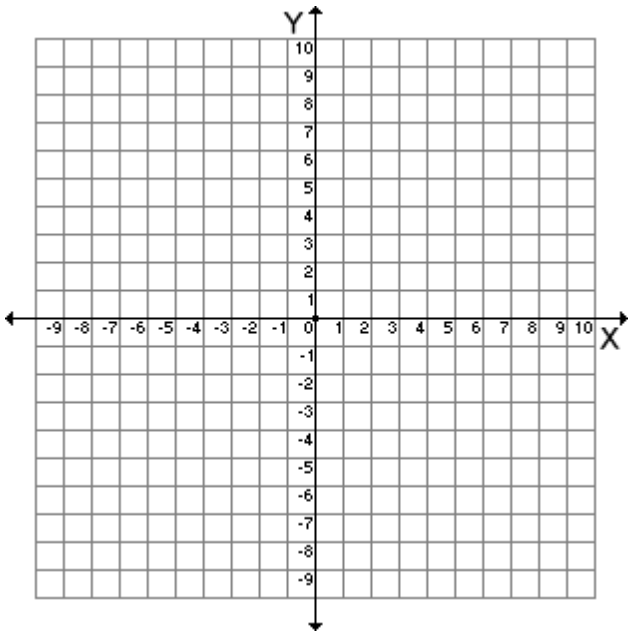




3 Graph $\dfrac{(x+1)^2}{9} - \dfrac{(y-3)^2}{4} = 1$
(Find vertices and sketch asymptotes)



4 Graph $xy = -8$



5 Write the equation $9x^2 + y^2 + 18x - 6y + 9 = 0$ in the form

$\dfrac{(x-h)^2}{b^2} + \dfrac{(y-k)^2}{a^2} = 1$ and then sketch its graph.