

Math 71
Summer 2009

Name _____

Homework #19

Last one!

Due Wednesday, July 29

No late homework accepted! No excuses!

1. Sketch the graph of the following conics. If the conic is a parabola, label the vertex, the intercepts, and the axis of symmetry. If the conic is an ellipse, label the center and the endpoints of the major and minor axis. If the conic is a hyperbola, label the center, the vertices and the asymptotes (good practice for the final).

a) $x = -(y + 3)^2 + 1$

$$\text{b) } \frac{(y-1)^2}{4} - \frac{(x+2)^2}{1} = 1$$

3. Solve the following system of non-linear equations.

a) $x^2 + 4y^2 = 20$
 $x + 2y = 6$

b) $xy = 4$
 $x^2 + y^2 = 8$

4. The difference between the squares of two numbers is 5. Twice the square of the 2nd number subtracted from three times the square of the first number is 19. Find the numbers.

5. Three apples and two bananas provide 354 calories, and two apples and three bananas provide 381 calories. Find the number of calories in one apple and one banana.