

**Math 1151, Lecture 010, Evaluative Exercise 5**

April 8, 2010

**Name:** \_\_\_\_\_

**Discussion Section:** \_\_\_\_\_

**Discussion TA:** \_\_\_\_\_

**Seating Section:**   Left Front   Right Front  
                          Left Back    Right Back

You have twenty-five minutes to complete the following six problems, without using your notes or your book. You may use a scientific a calculator.

1. Find the center, foci, and vertices of the following conic section. Graph the conic section.

$$9(x - 2)^2 + 4(y - 1)^2 = 36$$

2. Find the equation and the asymptotes for the hyperbola with focus at  $(0, 5)$  and vertices at  $(0, 3)$  and  $(0, -3)$ . Graph the hyperbola and its asymptotes.

3. Solve the system of equations:

$$\begin{cases} 2x + 2y & = 6 & (1) \\ x + y + z & = 1 & (2) \\ 3x + 4y - z & = 13 & (3) \end{cases}$$

Is this system consistent or inconsistent? If consistent, are the equations dependent or independent?

4. **Challenge:** Solve the system of equations:

$$\begin{cases} x + y + z = 6 & (1) \\ 2x - y - z = 3 & (2) \\ x + 2y + 2z = 0 & (3) \end{cases}$$

Is this system consistent or inconsistent? If consistent, are the equations dependent or independent?