Mat 110 Quiz 4 Take Home

Name:_____

Honor Code: **Read and sign please!**

Due in the first 5 mins of class. No late quizzes will be accepted.

The work on this quiz represents my own work. I understand that I cannot discuss or talk about anything on the quiz with any other human being (that includes spouses, children, non-group classmates, tutors, other teachers, ...). I also understand that I can use notes from class and/or the textbook. I further understand that in the event I don't follow this agreement I could receive a zero on this quiz and have further academic action taken against me.
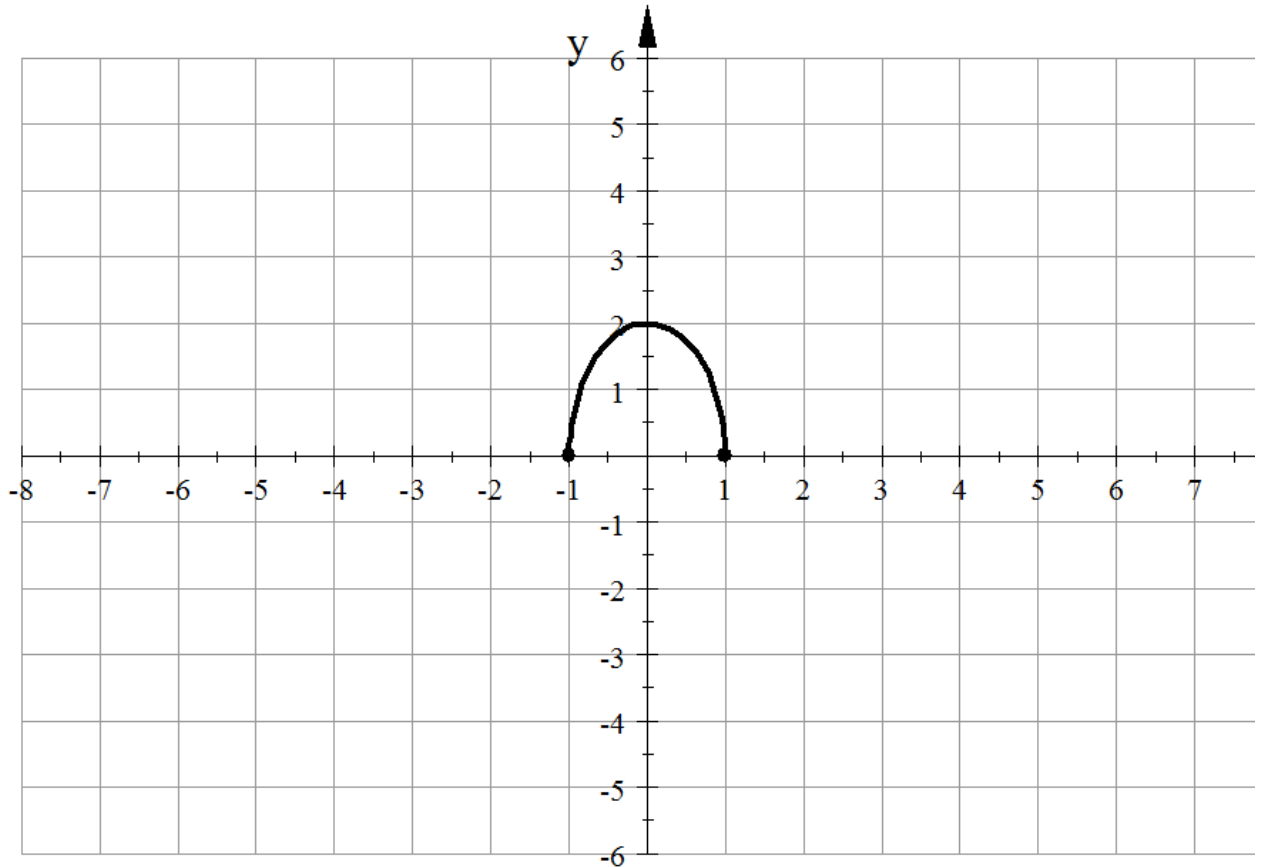
Name: _____   Signature for Honor Code _____

Work must be neat otherwise you will receive no credit.

Total pts out of 20 _____

1. Sketch the graph of the functions below. Please show all your work and clearly show relevant points. (4 pts)

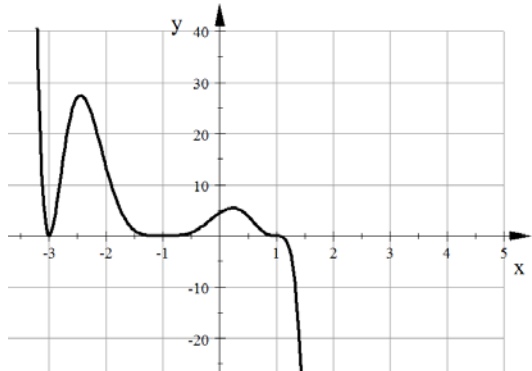   A. Use the function $y = f(x)$ shown below to sketch the graph of $y + 2 = -2f(x + 1)$
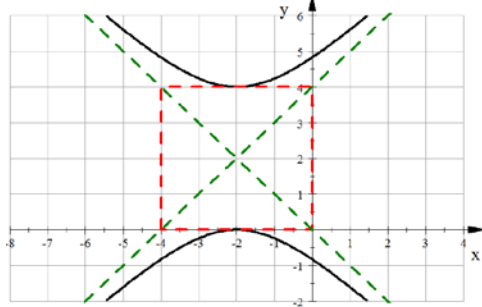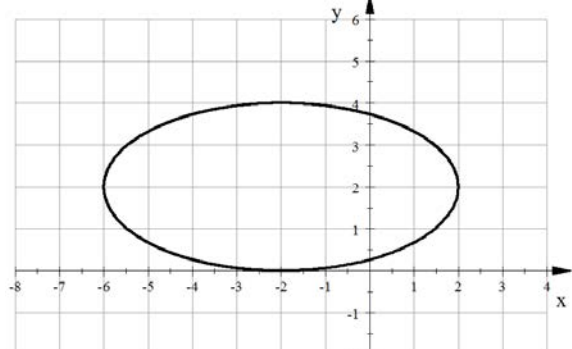
2. Identify the conic section. Sketch the graph of the conic section and show all the relevant parts in the graph clearly. If you identify the conic section as (3 pts each)

   I.   a circle, please find the center and radius.

   II.   as a parabola, please find the vertex, the focus, and the directrix.

   III.   as an ellipse, please find the center, major and minor axis, and the foci

   IV.   as a hyperbola, please find the center, the foci, and the asymptotes.

A. $4y^2 = 6x - x^2 + 7$	B. $4x^2 + 8x + 4y^2 - 24y = 24$
C. $4x^2 + 8x + 9y^2 - 54y + 49 = 0$	D. $-\dfrac{(x+3)^2}{16} + \dfrac{(y-1)^2}{25} = 1$

3. Match each relation to its appropriate graph. If there is no match, please state so.
   Match all the quantities in Column B that are equivalent to quantities in Column A. Some of the column B quantities may not have any corresponding items in column A, but all items in column A have at least one or more corresponding items in column B. Explain your reasoning for the choices you made. (1 pt each)

Column A	Answer	Column B
i. $$\frac{(x+2)^2}{16} + \frac{(y-2)^2}{4} = 1$$ Reasoning:		
ii. $$\frac{(x+2)^2}{4} - \frac{(y-2)^2}{4} = 1$$ Reasoning:		
iii. $$y = -\frac{1}{2}(x-1)^3(x+1)^4(x+3)^2$$ Reasoning:		
iv. $$-\frac{(x+2)^2}{4} + \frac{(y-2)^2}{4} = 1$$ Reasoning:		