Math 110   Quiz 6 (Take Home)   Name:_____

Due on Wednesday, April 6, 2016

Code of Academic Honesty

The work on this exam represents my own. I am allowed to use class notes and lectures. I am not allowed to get help from any other human being (classmates, other teachers, tutors, spouses, children, other family members,….).

Signature_____   **Date: _____**

Guidelines and criteria for the Quiz:

1. If you break the Code of Academic Honesty, proceedings of academic misconduct will be brought against you and you risk getting a zero on this test.
2. If you do not follow the guidelines established in class and lectures on how the solutions are written and presented, you may risk getting a zero on the exam.
3. Please write your work on the space provided for you.
4. All graphs should be presented on the grid that is provided to you on the quiz.
5. On all graphs the axes must be clearly labeled (including use of proper units when appropriate).
6. On all graphs please show the appropriate scale.
7. Use a ruler to graph all your lines. Graphs where a ruler is not used will not get any credit.
8. The work should be written neatly. If the solutions are illegible, you risk getting a zero on these solutions.
9. You must be able to defend your work orally if needed.
10. No late quizzes are accepted unless prior permission is granted.
11. Please staple all pages before turning the quiz in.

Total points out of 42: _____

1. Find all the roots of $p(x) = x^4 - 5x^3 + 7x^2 - 5x + 6$. (6 points)

Roots: _____

2. Perform the long division, and write your answer in the form of $\text{Quotient} + \dfrac{\text{Remainder}}{\text{Divisor}}$. (4 points)

$(x^3 - 2x^2 + x - 2) \div (x^2 + 2x - 3) =$

3. Sketch the graph of the function below. (12 pts)

$$f(x) = \frac{x^3 - 2x^2 + x - 2}{x^2 + 2x - 3}$$
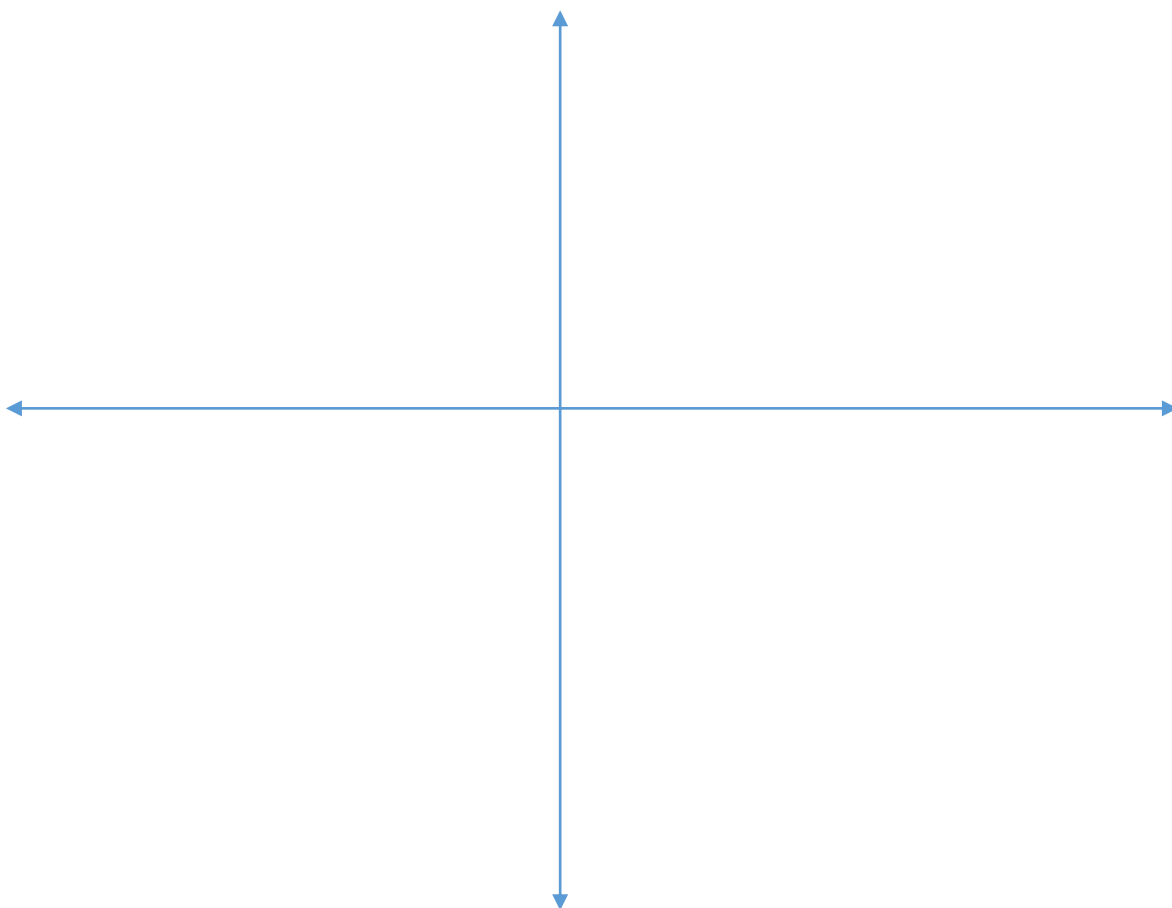
Domain: _____

x-int: _____

y-int: _____

Vertical Asymptote(s): _____

Horizontal Asymptote(s): _____

Oblique Asymptote(s): _____

The graph intersects the _____ asymptote at x-value(s) _____.

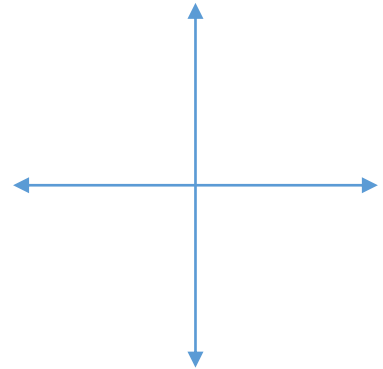For problems 4 – 7 (5 points each), **identify** the shape, **sketch** the graph, and **find**:
A. find the vertex, focus, and directrix if it is a parabola
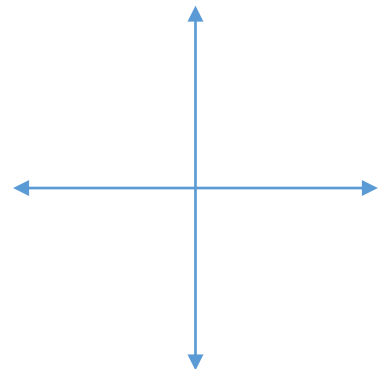B. find center and radius if it is a circle
C. find the center, a, b, and foci if it is an ellipse
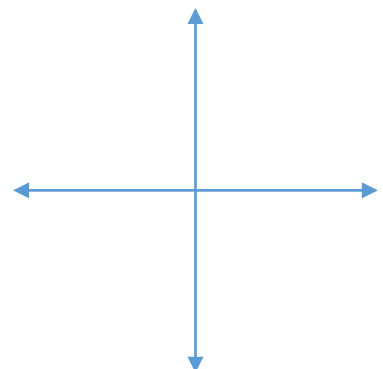D. find the center, a, b, and foci if it is a hyperbola

4. $x^2 - 6x + y^2 + 2y = 6$

5. $9(x - 3)^2 + 4(y + 1)^2 = 36$

6. $4(x - 3)^2 - 9(y + 1)^2 = 36$

7. $x^2 - 4x + 1 = y$