

Instructor: Sal Barone

Name: _____

GT username: _____

1. No books or notes are allowed.
2. No electronic devices are allowed.
3. Show all work and fully justify your answer to receive full credit.
4. Please BOX your answers.
5. Good luck!

Page	Max. Possible	Points
1	24	
2	28	
3	24	
4	24	
Total	100	

1. Find the x -intercepts and the y -intercept of the function $y = (x - 2)^2 - 9$. (12 pts.)

2. Find the standard form of the quadratic function which has a vertex at $(-1, 2)$ and passes through the origin. (12 pts.)

3. Find all rational roots of the polynomial $p(x) = x^3 - 6x^2 + 3x + 10$. (14 pts.)

4. Find all real and complex roots of the polynomial $p(x) = x^3 + x^2 - 2$. (14 pts.)

5. Find the horizontal and vertical asymptotes of the function $f(x) = \frac{x^2 - 1}{x^2 - 4}$. (14 pts.)

6. Graph the function in the previous problem. You will get credit for finding x -intercepts, y -intercepts, drawing the asymptotes, etc., as well as the accuracy of your graph. (10 pts.)

7. Determine whether the quadratic function $f(x) = 2x^2 - 4x + 5$ has a minimum or maximum value, find that value, and state the range of f . (16 pts.)

8. Which graph represents the function $y = \frac{1}{x}$. Circle the letter corresponding to the correct graph. (8 pts.)