Quiz 9-10, a take-home quiz, due Wednesday, April 2.

Each problem costs 1 point. Please write neat detailed solutions with explanations of what you doing. Answers and sketches will not count. This is good practice for the second exam though, of course, not all topics are covered. To prepare for the exam look at the sample exams from previous years posted at the website.

1. Find the range of $f(x) = 1/x$.
2. Find the domain of $f(x) = \sqrt{x+3} + \frac{1}{\sqrt{x}}$.
3. Find ARoC of $f(x) = x^2 - 2x$ between $x = -1$ and $x = 10$.
4. Find ARoC of $f(x) = \frac{1}{2}x + 5$ between $x = a$ and $x = a + h$.
5. Write down sequence of transformations that needed to sketch the graph of $f(x) = (2x+1)^2 - 1$. Sketch the graph.
6. The function $f(x) = \sqrt{x}$ was shifted 4 units up, reflected with respect to y-axis and then shifted 1 unit to the left. Write down the formula for the final transformed graph.
7. Find the vertex of $f(x) = x^2 - 8x + 1$.
8. Find the range of $f(x) = -3x^2 + 6x$.
9. Among rectangles with fixed perimeter of 10 feet find the side x of the one with the largest area.
10. Determine if function is even, odd or neither a)$f(x) = (x+2)^2$ b)$f(x) = \frac{1}{x^2}$ c)$f(x) = 1 + \frac{1}{x^2}$.
11. Determine if given function is 1-2-1 a)$f(x) = -x^2 - 5x + 3$ b)$f(x) = \sqrt{x}$ c)$f(x) = |x|$.
12. Find f^{-1} if $f(x) = \frac{x-1}{2x+1}$.
13. Determine the end behavior of the polynomial $P(x) = x - x^7 + x^5 + 1$.
14. Determine the end behavior of the polynomial $P(x) = x^2 - 3x^3 + 2x^4$.
15. Sketch the graph of $P(x) = (x-3)^2(x-1)^2$.
16. Sketch the graph of $P(x) = (x+4)x^2(x-2)(x-1)$.
17. What remainder is obtained when $P(x) = 2x^3 + 4x^2 - 5x - 4$ is divided by $x - 2$.
18. What remainder is obtained when $P(x) = x^4 + 2x^3 + 3x + 4$ is divided by $x - 1$.
19. Find vertical and horizontal asymptotes of $f(x) = \frac{x+1}{x-1}$.
20. Find vertical and horizontal asymptotes of $f(x) = \frac{2-x}{x^2-1}$.