Senior Analysis   Name _____

Graphing Rational Functions   Lecture 28

Graph the following, labeling all asymptotes and including a table of points. Check your answer on the graphing calculator. If it doesn't agree, sketch what you see on the screen next to your answer.

1. $y = \dfrac{x-1}{x+3}$

2. $y = \dfrac{-x+2}{x-1}$

3. $y = \dfrac{2}{x-3}$

4. $y = \dfrac{x}{x^2-4}$

5. $y = \dfrac{x^2}{x^2-4}$

6. $y = \dfrac{1}{x}$

Senior Analysis   Name _____

Graphing Absolute Values   Lecture 29

Graph the following and label the vertex. Include a table of points, please. Check your answer on the graphing calculator. If it doesn't agree, sketch what you see on the screen next to your answer.
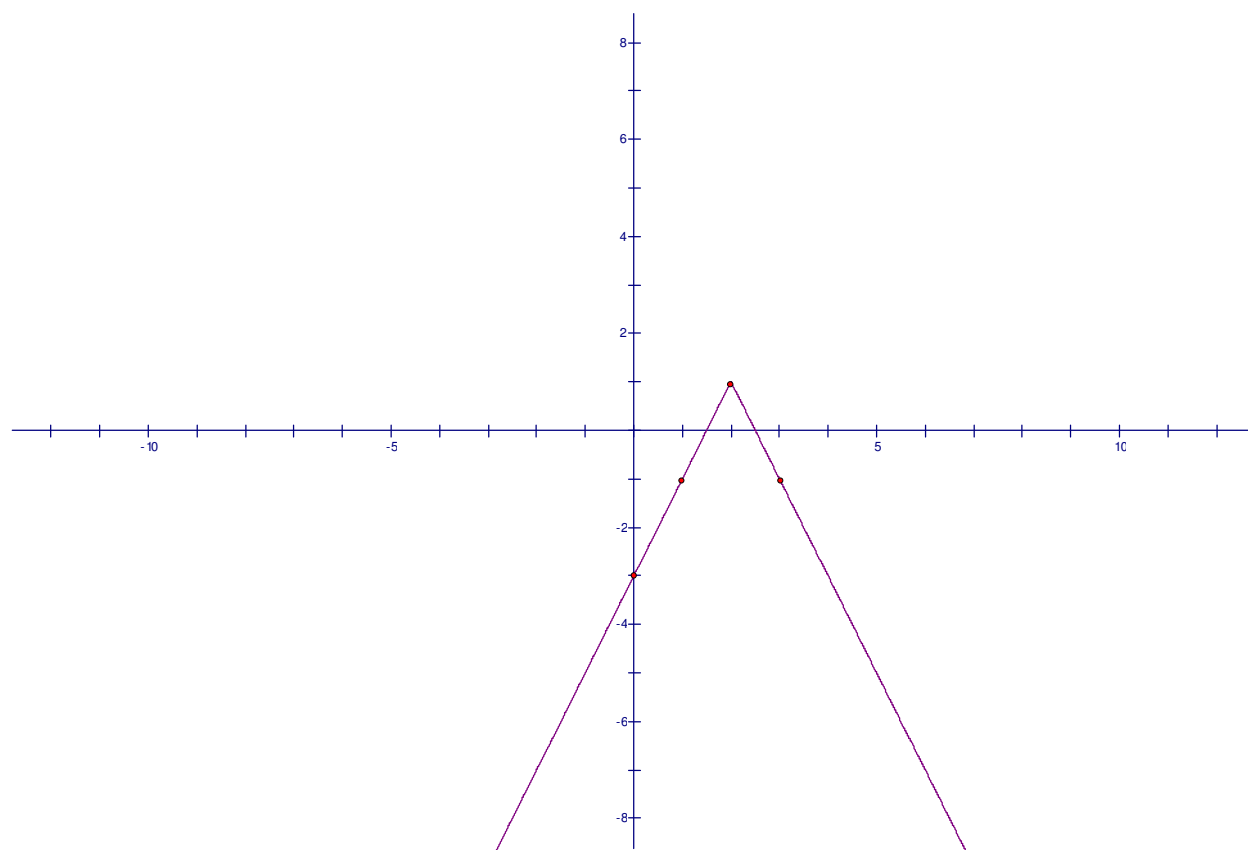
1. $y = |x - 3| + 1$ 2. $y = \frac{1}{3}|x| + 1$

3. $y = -2\left|\frac{1}{2}x - 1\right| + 4$ 4. $x = |y + 2| - 3$

5. Find an equation that would fit this graph. Each tick = 1

Senior Analysis   Name _____

Curve Sketching   Lecture 30
                                                                   Lecture 31

Sketch the following using this process:
A. Find first (y′) and second (y″) derivatives.
B. Identify max/min points (y′) and inflection points (y″)
C. Determine whether graph is increasing or decreasing (y′) and concave up or down
(y″).
 Include a table of points, please. Check your answer on the graphing calculator. If it
doesn't agree, sketch what you see on the screen next to your answer.

1. $y = x^2 - 4x - 5$

2. $y = x^3 - 3x^2 - 9x + 20$

3. $y = 4x - 2x^2$

4. $y = -x^3 + 6x^2 - 9x + 4$

5. $y = x^4 - 2x^3 + 10x$

6. $y = x^3 - 3x^2 - 9x + 11$

7. $y = \dfrac{x-1}{x+3}$

8. $y = \dfrac{-x+2}{x-1}$

9. $y = \dfrac{2}{x-3}$

10. $y = \dfrac{x}{x^2-4}$

11. $y = \dfrac{x^2}{x^2-4}$

12. $y = \dfrac{1}{x}$