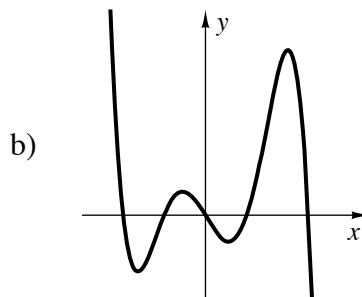
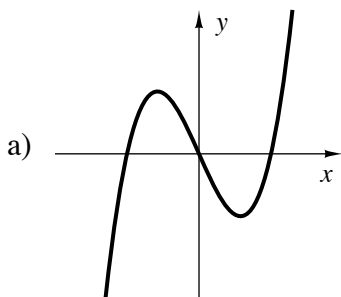


NOTE: These problems are to be done on Engineering paper, using the standard homework format. You may consult with me or with other students on this assignment. Questions about these problems will not be answered during class.

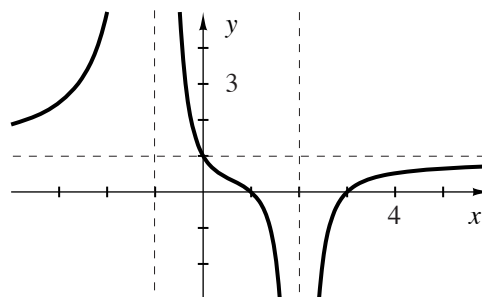
- Determine the end behavior of an n th degree polynomial function if
 - $n = 5$ and $a_n = 5$
 - $n = 8$ and $a_n = -8$
- Explain why each of the following graphs cannot represent a polynomial function with highest degree term $-4x^3$.



- For the function: $f(x) = \frac{x}{x^2 - x - 2}$
 - Determine any vertical or horizontal asymptotes.
 - Sketch the graph of $y = f(x)$.

- For the function: $g(x) = \frac{12x(x-3)^2}{(2x+3)^2(x-2)}$
 - Determine any vertical or horizontal asymptotes.
 - Sketch the graph of $y = g(x)$.

- Consider the graph of the function shown on the adjacent coordinate system. Make up a rational function whose graph would look like the one shown.



Hint: Look for clues in the function and graph of Problem #4.