MTH 30, Sec. 2996S. QUIZ 6. NAME:_____

[10] **1.** For the rational function $f(x) = \dfrac{x^3 - 3x^2 - 13x + 15}{x^3 - 8x^2 + 9x + 18}$. find (**NOTE: you do not have to graph it!**)

    0) Whether it is an odd or an even function, or neither.

    1) The vertical asymptotes, if any.

    2) The horizontal asymptotes, if any.

    3) The x-intercepts, if any.

    4) The y-intercepts, if any.

[10] **2.** A rational function f has the following characteristics:

0) It is an even function.

1) It has vertical asymptotes at $x = -3$ and $x = 3$.

2) It has a horizontal asymptote at $y = -2$.

3) Its x-intercepts are at -5, -1, 1, and 5.

4) Its y-intercept is at 0.

5) Some values of the function are $f(0) = 1$, $f(2.5) = -6$, $f(3.5) = 7$, $f(6) = 1$, $f(8) = 0.25$.

Sketch the graph of f in the axes below.