Rational Functions - Worksheet
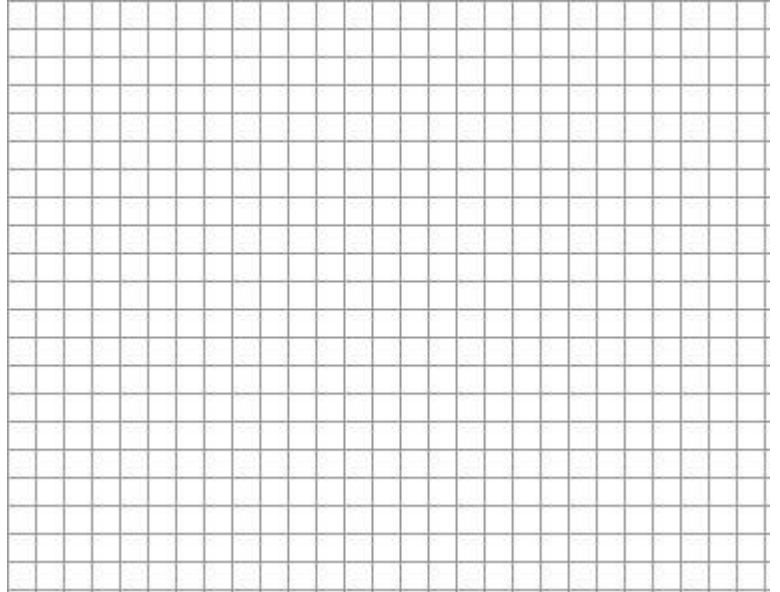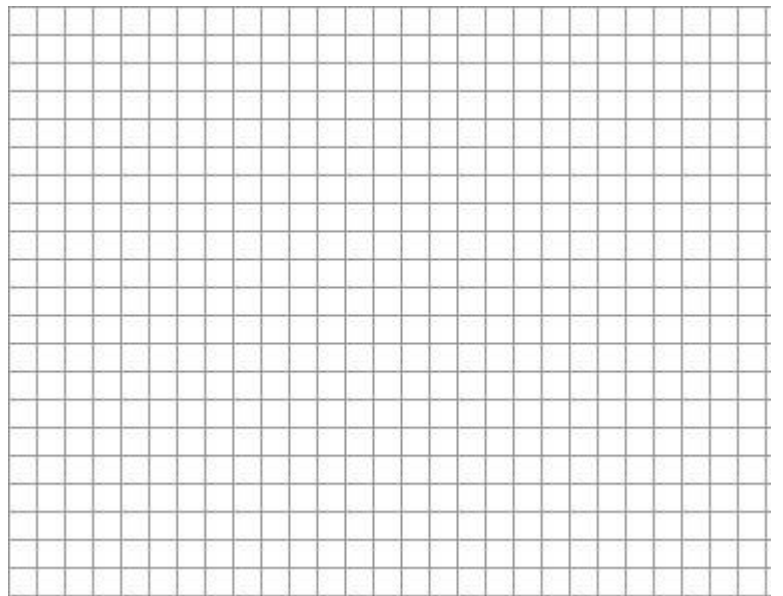
NAME:

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1. Use algebra to determine the location of the vertical asymptotes and the holes in the graph of the function $f(x) = \dfrac{x^2}{x^4 - x^2}$. Sketch the graph of the function along with the asymptote(s).

2. Find the horizontal asymptote of the graph of the function $g(x) = \dfrac{3x^5 + 2x^2 - 1}{6x^5 + x^3 + 2x + 1}$. Sketch the graph along with the asymptote.

3. Analyze the function $f(x) = \dfrac{x-1}{(x+2)(x-3)}$ algebraically. List its vertical asymptote(s), hole(s), x- and y-intercept(s), and horizontal asymptote, if any. Sketch a complete graph of the function.