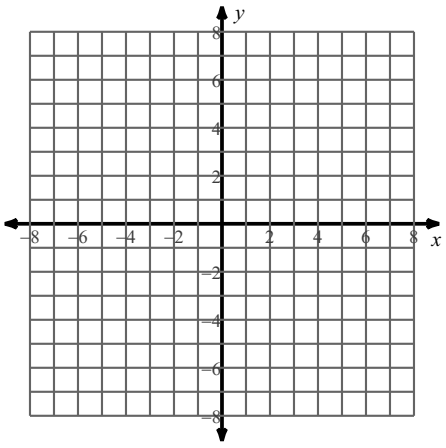
Advanced Math Functions & Statistics Name_____

Graphing Rational Functions (1)

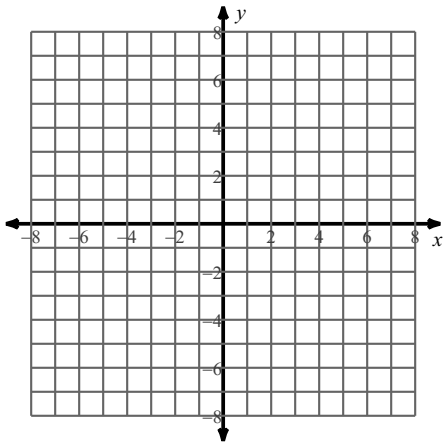
Date_____ Period____

Identify the vertical asymptotes and horizontal asymptote of each. Then sketch the graph.

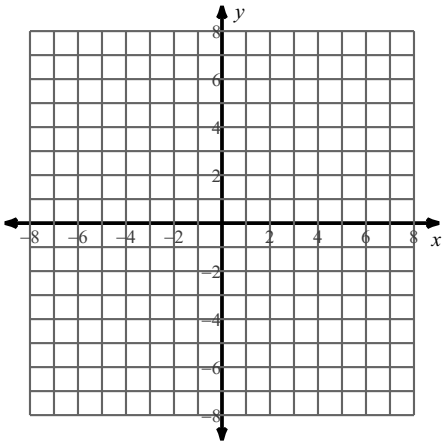
1) $f(x) = \frac{1}{x+4} - 2$



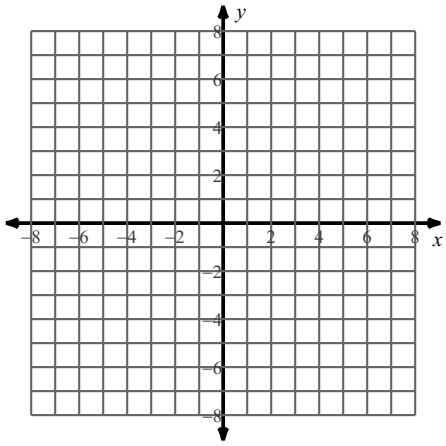
2) $f(x) = \frac{1}{x+1} - 2$



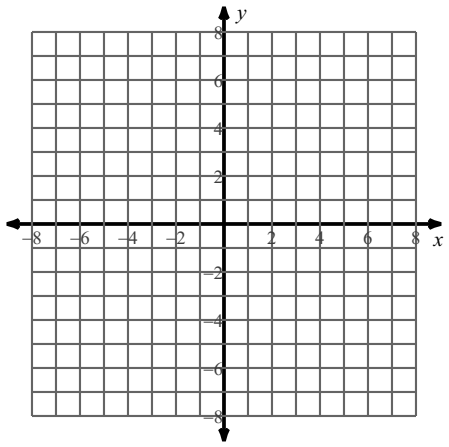
3) $f(x) = -\frac{2}{x+3} + 1$



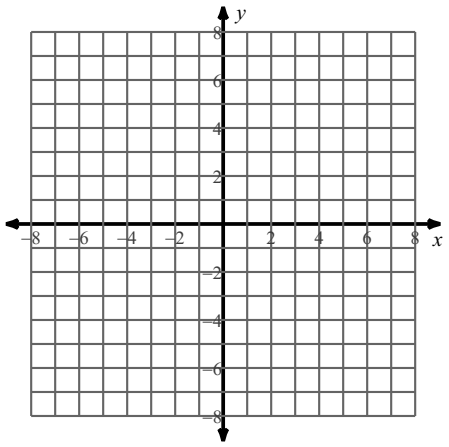
4) $f(x) = \frac{4}{x+1} - 2$



5) $f(x) = -\frac{3}{x} - 2$



6) $f(x) = \frac{3}{x} + 1$



Simplify each and state the excluded values.

7) $\frac{x + 6}{6x^2 + 36x}$

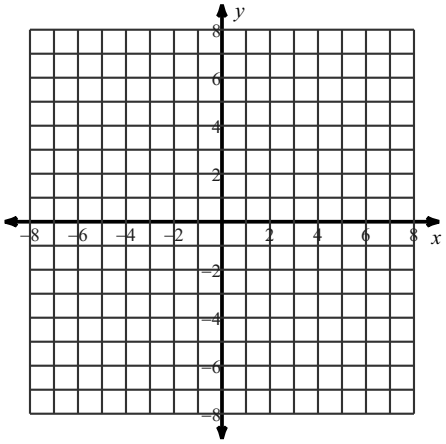
8) $\frac{x^2 + 9x + 18}{x + 3}$

9) $\frac{x^2 - 11x + 10}{x^2 + x - 2}$

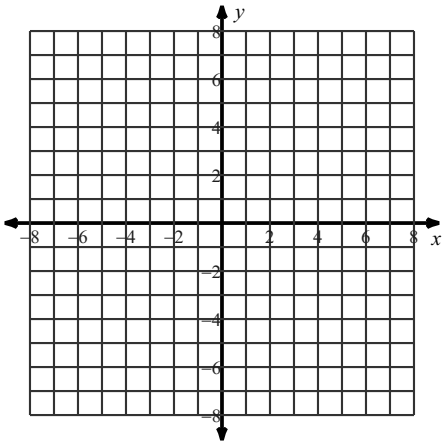
10) $\frac{x^2 - 3x - 54}{x^2 + 14x + 48}$

Identify the points of discontinuity, holes, vertical asymptotes, x-intercepts, horizontal asymptote, and domain of each. Then sketch the graph.

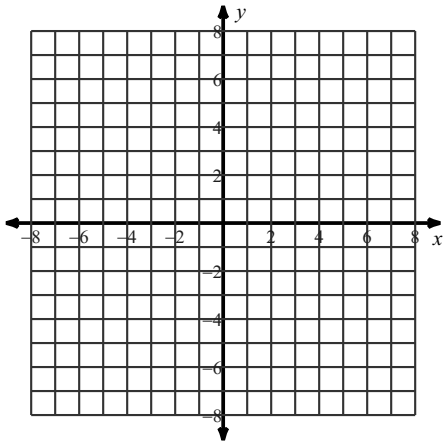
11) $f(x) = \dfrac{x+2}{x^2-9}$



12) $f(x) = \dfrac{x^2-3x+2}{x^2-x}$



13) $f(x) = \dfrac{x^3-2x^2-3x}{-4x^2-12x}$



14) $f(x) = \dfrac{x^2+x-2}{x^2-x-2}$