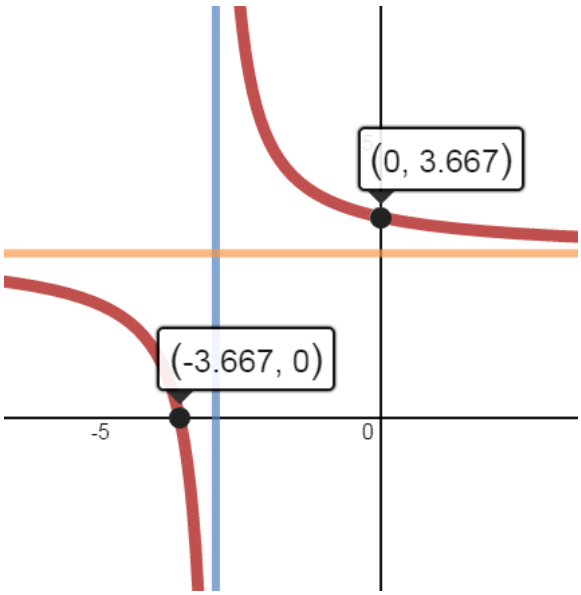
8.02 – Reciprocal and Rational Functions Name _____

Use the functions below...

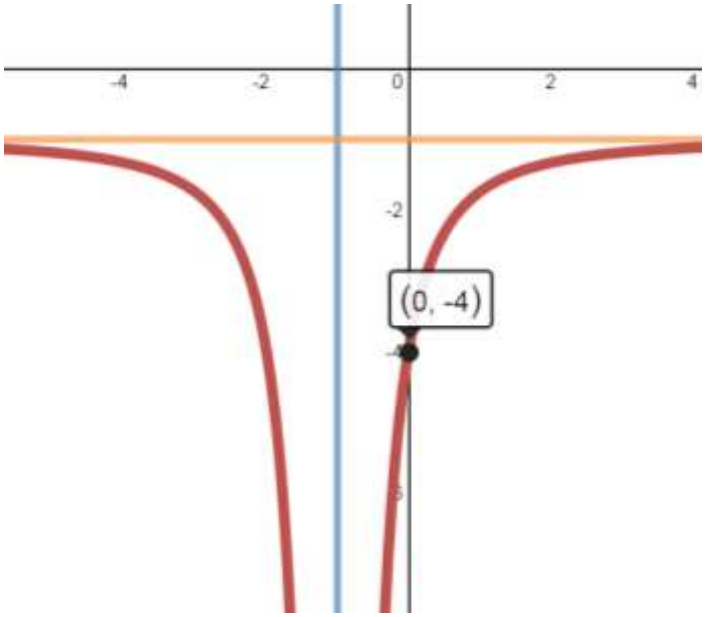
A - Write them as rational functions.

B - Graph the functions on the graphs provided. Be sure to identify each asymptote and the y-intercepts of each.

a. $f(x) = \frac{2}{x+3} + 3 = \mathbf{\frac{3x+11}{x+3}}$

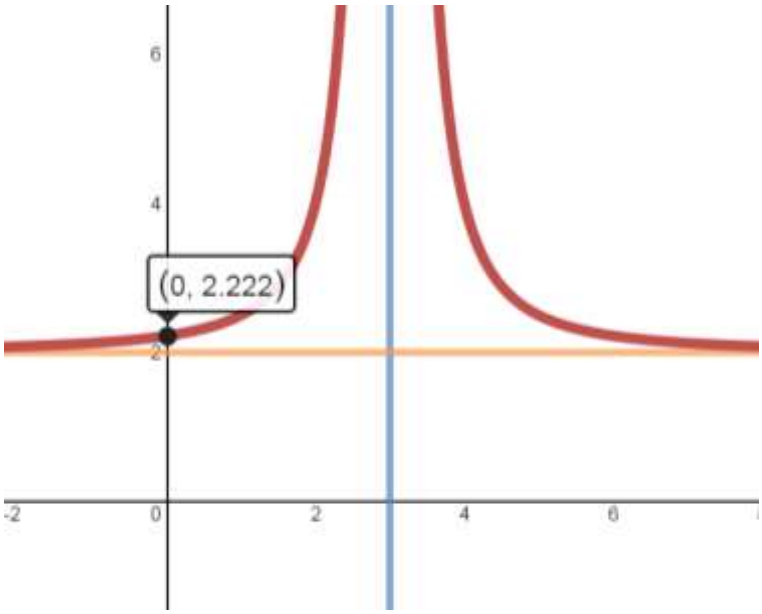


b. $g(x) = -1 - \frac{3}{(x+1)^2} = \mathbf{\frac{-x^2-2x-4}{(x+1)^2}}$



c. $h(x) = 2 + \frac{2}{(x-3)^2}$

$= \mathbf{\frac{2x^2 - 12x + 20}{(x-3)^2}}$

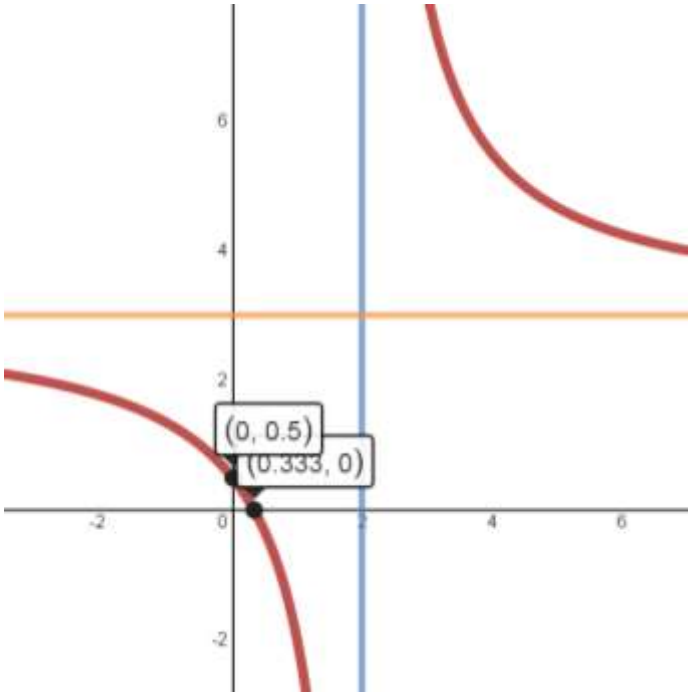


Use the functions below...

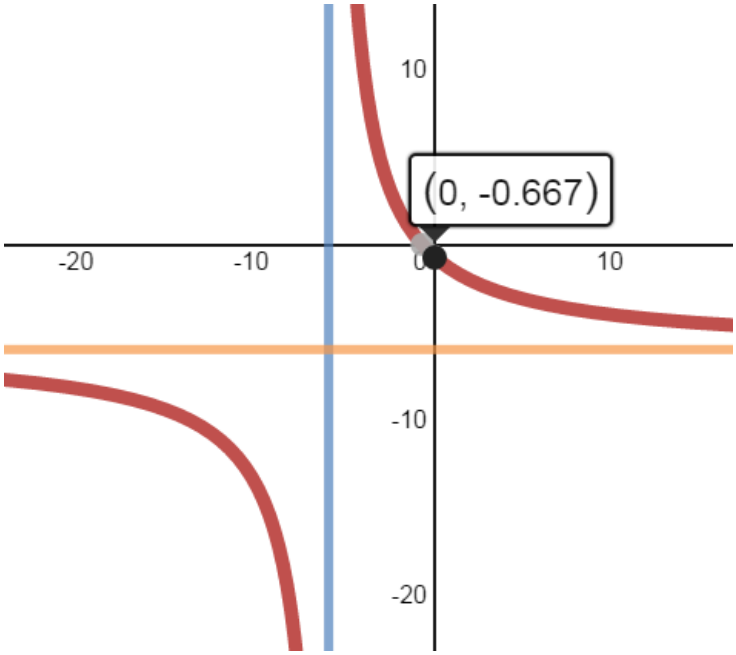
A - Write them in $f(x) = \frac{a}{x-h} + k$ form.

B - Graph the functions on the graphs provided. Be sure to identify each asymptote and the y-intercepts of each.

a. $f(x) = \frac{3x-1}{x-2} = \frac{\mathbf{5}}{\boldsymbol{x-2}} + \mathbf{3}$



b. $g(x) = -\frac{6x+4}{x+6} = \frac{\mathbf{32}}{\boldsymbol{x+6}} - \mathbf{6}$



c. $h(x) = \frac{-5x-5}{x-1} = \mathbf{-5} - \frac{\mathbf{10}}{\boldsymbol{x-1}}$