Math 126, in-class exercise 2 on functions: Name: .

1.) Let $f(x) = x^2 = 3$ and let $g(x) = \frac{1}{x^2} - 7$. Find the formulas for $(f\ o\ g)(x)$ and $(g\ o\ f)(x)$

2.) Suppose $h(x) = \sqrt[4]{x^2 + \frac{3}{x}}$ identify how h is formed as the composite of functions g and f. In particular, find formulas for $f(x)$ and $g(x)$ such that $h = g\ o\ f$.

3.) Graph $y = f(x)$ where $f(x) = p(x)/q(x)$ and $p(x) = (x-2)^2(x^2-1)$ and $q(x) = (x^2+4x+5)(x^3-9x^2)$. Your graph should include labels for Vertical Asymptotes (VA) and x-intercepts. Please make a sign-chart to help guide your work.