MATH 108 Quiz #6 Fall 2017 Name _____

Directions: Answer each question as completely as possible. Show all work for credit. Good luck.

1. Suppose $f(x) = \frac{(x^2-5x+4)(x+1)}{x^2-2x-3}$

a) Find the domain of f.

b) Determine any "holes" in the graph of f, if any exist. If none exist, write NONE.

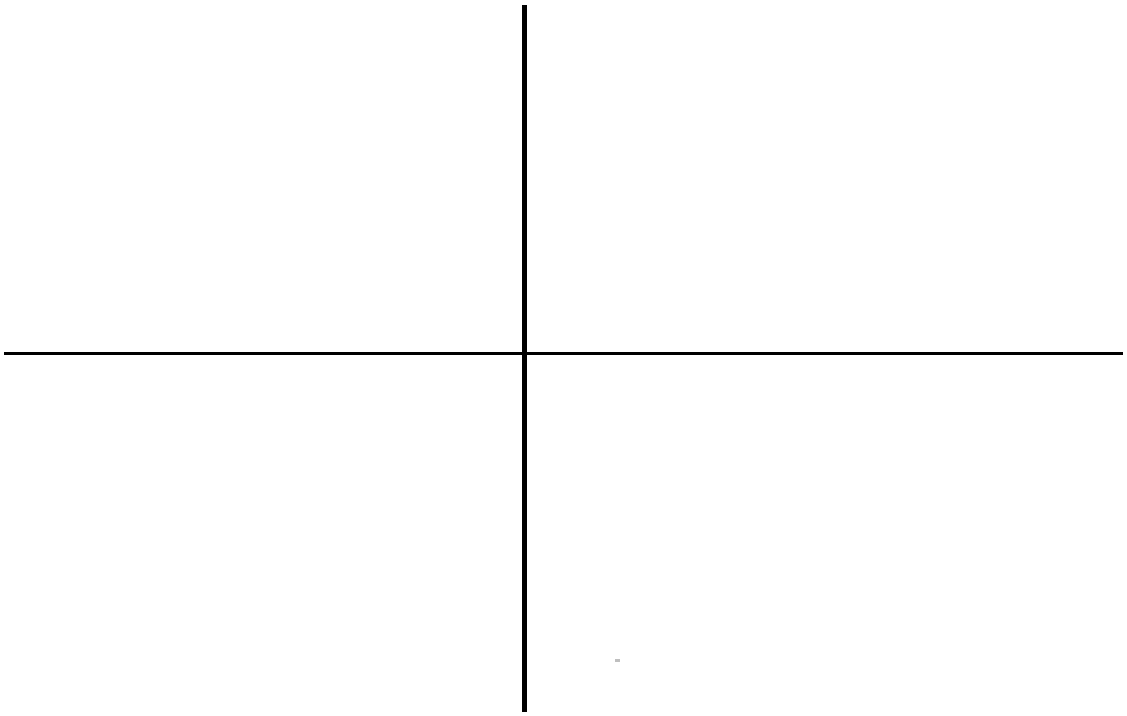
c) Determine the equation of any vertical asymptotes to the graph of f.

d) Determine the y-intercept of the graph of f.

e) Determine any x-intercepts on the graph of f, if any exist.

f) Find any other asymptotes (horizontal/slant) to the graph of f.

g) Use the information found above to draw a rough sketch of the graph of f.



2. Suppose $g(x) = \frac{-2x^3+12x^2-18x}{x^3-3x-2}$

a) Find the domain of g.

b) Determine any "holes" in the graph of g, if any exist. If none exist, write NONE.

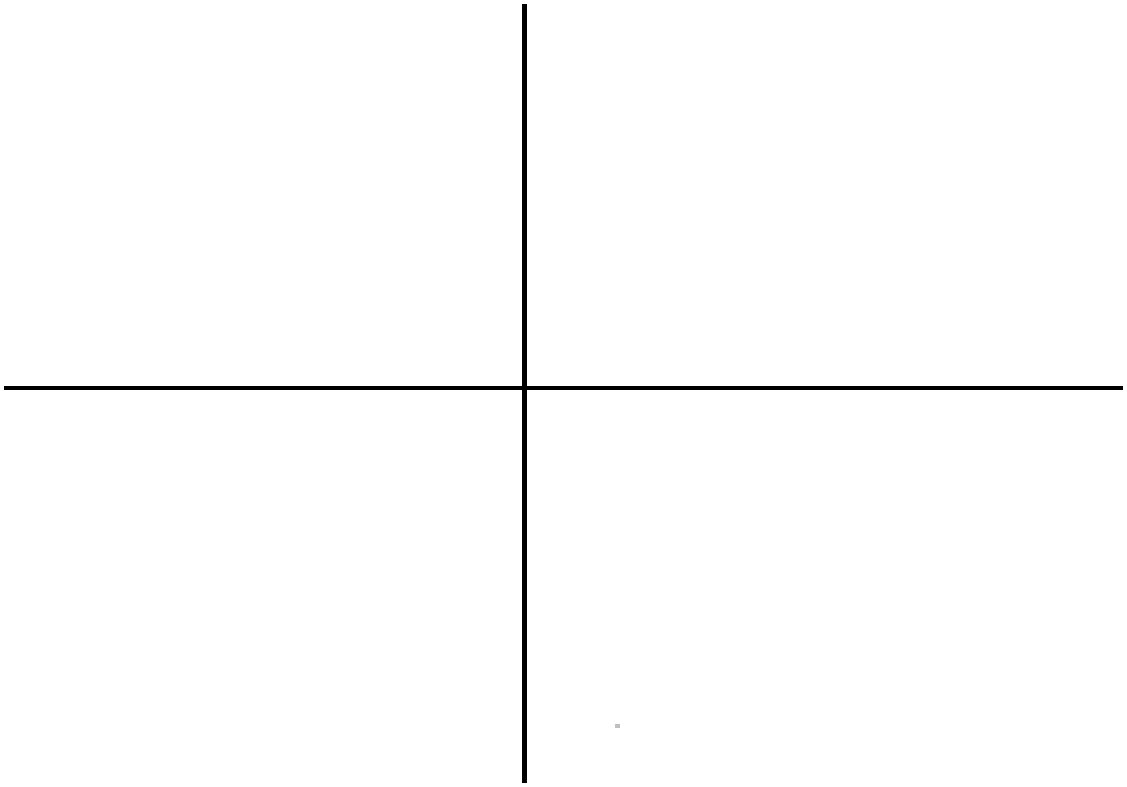
c) Determine the equation of any vertical asymptotes to the graph of g.

d) Determine the y-intercept of the graph of g.

e) Determine any x-intercepts on the graph of g, if any exist.

f) Find any other asymptotes (horizontal/slant) to the graph of g.

g) Use the information found above to draw a rough sketch of the graph of g.



3. In each part, find the equation of a non-polynomial rational function f (in other words, the denominator should have a variable) having the following characteristics:

a) no vertical asymptotes and a slant asymptote

$f(x) =$

b) exactly one x-intercept, exactly two vertical asymptotes, and a horizontal asymptote of $y = 2$.

$f(x) =$