3.1-3.4 Quiz review for graphing polynomial and rational functions

1. f(x) = - (x-1)2(x+2)(x-3)

 a. Determine the end behavior \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b. x-intercepts:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; y-intercept:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 c. State whether the graph touches or crosses the x-intercept:

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 d. graph on graphing calculator

 e. Use graph to determine any local max or min. Round to the nearest two decimal places.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 f. Use the info obtained in (a) – (e) to draw a complete graph by hand. Label all

 intercepts and turning points.

 g. Domain:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ; Range:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 h. Increasing:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; Decreasing:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Graph the function. Label all critical aspects.

2. f(x) = $\frac{x^{2}+2x-8}{x^{2}+9x+20}$

What is the domain of f(x)?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Express f(x) in lowest terms: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

x-intercepts:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ; y-int: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vertical Asymptotes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Horizontal Asymptotes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Oblique Asymptotes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Holes in the graph:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_