Part 4: GRAPHING EQUATIONS – Answer 1 of the following 2 problems in this part. This part is worth 20 points.

1) For the polynomial equation $y = 3x^3 - 5x^2 - 34x + 24$

a) Graph the equation in a viewing window that allows for the viewing of the intercepts and the extrema points.

Xmin = _____

Xmax = _____

Ymin = _____

Ymax = _____

b) Find the y-intercept and the zeros of the equation to the nearest tenth if necessary.

y-intercept = _____ zeros = _____

c) Find the relative extrema (maximum / minimum point of the equation) rounding to the nearest tenth if necessary.

_____

d) Use synthetic division to verify the zeros.

2) For the rational function: $y = \dfrac{x^2 + 4x + 4}{x^2 - x - 6}$

a) Find the vertical asymptote(s). a)_____

b) Find the horizontal or slant asymptote. b)_____

c) Identify any holes. c)_____

d) Find the x-intercept(s). d)_____

e) Find the y-intercept. e)_____

f) Sketch the graph in a viewing window that displays the asymptotes, holes, and the intercepts.

Xmin = _____

Xmax = _____

Ymin = _____

Ymax = _____