Pre-Calculus
Exam Review
Sections 2.5 – 2.8
Modeling Functions

Name _____

NO CALC!

1) For each of the following, find the domain, range, asymptotes (H/V/Slant), removable discontinuities, limits at all asymptotes, x & y intercepts, and sketch a graph.

a) $y = \frac{2x}{x-3}$

b) $y = \frac{x-2}{x^2+3x-10}$

c) $y = \frac{3x^2+4x-2}{x+1}$

2) Write an equation for the polynomial function with degree 4 and having zeros at $3, -1, and\ 2-i$.

Factored Form:

Standard Form:

3) Solve $\frac{x}{x+1} + \frac{2}{x} = \frac{5}{x^2+x}$ using an algebraic method (LCD).

4) Solve $(x+3)(x-1)(x-4) < 0$ using an algebraic method (sign chart).

CALC OK!

5) Find ALL the zeros for $y = x^4 - 2x^2 + 16x - 15$.

6) A pan is to be made by cutting out square corners of a 32" by 44" piece of sheet metal, folding up the sides, and welding the seams. What size squares should be cut out for the pan to have a maximum volume? … for the pan to have a volume of at least 3740 cubic inches?