

# Honors Analysis

Name \_\_\_\_\_

Copy original problem.

Per \_\_\_\_\_

Date \_\_\_\_\_

Convince *me* that **you** understand the concept!

*No decimals.*

## Chapter 2 Exam

**I** Solve for all values of  $x$ . Show RRTS at work. (15 pts ea)

a)  $6x^4 - 19x^3 - 37x^2 + 62x + 24 = 0$

b)  $18x^4 + 9x^3 + 70x^2 + 36x - 8 = 0$

**II** Write the equations of the parabola (in graphing form) which satisfies the given. Determine all axis intercepts. Sketch. (15 pts ea)

a) focus  $(-1, 2)$

b) focus  $(1, 2)$

directrix  $y = -6$

vertex  $(1, 6)$

**III** There are an infinite number of parabolas which have  $x$ -intercepts  $-5$  and  $3$ . Write the equations in graphing form of 3 such parabolas. For each, identify coordinates of the vertex. Show that each of your parabolas do, indeed, have the proper  $x$ -intercepts. (15 pts)

**IV** Rancher, Ms. Barb Dwyer, has two thousand feet of fence material and plans to enclose the maximum area possible. She wants to know how much more area she can enclose if she also relocates a forty foot-long barn as shown in figure *B*. (25 pts)



**Extra Credit** ----- 5 pts -----

Ms. Dwyer is considering another arrangement. Barb thinks that she should relocate the barn so that it is on a 45 degree line in the corner. See figure *C*. What would be the dimensions which enclose the maximum area using this plan?

