

### Section 3.5 – Lecture Notes/Examples

Set up and solve an equation(s) to solve the following problems. Be sure to declare all variables and answer all word problems in complete sentences.

1. A gardener has 60ft of fencing and is building a rectangular garden
  - a. Find the **dimensions** that would give the garden of the largest area.
  - b. What is the **maximum area**
2. A farmer wants to enclose a rectangular field with an area of  $400 m^2$ .
  - a. What is the smallest amount of fencing needed?
  - b. What are the dimensions?
3. A soup container is to have a volume of  $16\pi$  cubic inches. The material for the top and bottom costs twice as much per square cm as the side. Find the dimensions of the can with
  - a. the smallest surface area
  - b. the cheapest production cost

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