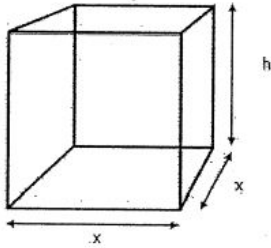Optimization steps:
1. Write equation for variable you want to optimize
2. Substitute to get equation in terms of one variable on one side
3. Find derivative, set derivative $= 0$ and solve.

1. A manufacturer wants to design an open box having a square base and a surface area of 108 in^2. What dimensions will produce a box with maximum volume?

2. A rancher has 200 feet of fencing with which to enclose two adjacent rectangular corrals. Which dimensions should be used so that the enclosed area will be a maximum?