**Extra Modeling Practice Sec 3.3 (2.1) Algebra for Calculus Stretch I Fall 14**

1. A rectangle has a perimeter of 100 feet. Express its area in terms of one of its sides, x.

\* Find the dimensions of maximum area.

2. A rectangle has a perimeter of 300 feet. Express its area in terms of one of its sides, x.

\* Find the dimensions of maximum area.

3. A rectangle has a perimeter of 400 feet. Express its area in terms of one of its sides, x.

\* Find the dimensions of maximum area.

4. A rectangular area borders on a stream. A farmer has 400 feet of fencing and intends to use it to fence the other three sides. Express the area in terms of one of its sides, x.

\* Find the dimensions of maximum area.

5. A rectangular area borders on a stream. A farmer has 1000 feet of fencing and intends to use it to fence the other three sides. Express the area in terms of one of its sides, x.

\* Find the dimensions of maximum area.

6. A rectangular area borders on a stream. A farmer has 250 feet of fencing and intends to use it to fence the other three sides. Express the area in terms of one of its sides, x.

\* Find the dimensions of maximum area.

7. A rancher has 720 yards of fencing with which to enclose two adjacent rectangular corrals. A river forms one side of the corrals. The rancher does not fence along the river. Suppose the width is x yards. Express the total area of the two corrals as a function of x. Find the domain. \*Find maximum total area.

8. A rancher has 456 yards of fencing with which to enclose two adjacent rectangular corrals. A river forms one side of the corrals. The rancher does not fence along the river. Suppose the width is x yards. Express the total area of the two corrals as a function of x. Find the domain. \*Find maximum total area.