MATH 160 Session #9

1. Write an equation for the line through the points (2,8) and (10, 32).

2. Sketch of the graph of $y = -2(x - 4)^2 + 8$. Label the vertex and x-intercepts.

3. a. Assuming a linear cost model, find the equation for the cost C of producing x items if \$8 is the cost per item and the fixed costs are \$2000.

   b. Assuming a linear revenue function, find the an equation for the revenue R produced by selling x items if the price per item is \$12.

   c. Give the cost and revenue functions of a. and b. write an equation for the profit P derived by producing and selling x items. What is the break-even quantity?

4. The weight w in pounds of a calf (at 8 months) is approximately related to the age t in years of its mother according to the rule $w \approx 412 + 28t - 2t^2$. What mother's age maximizes calf and what is the maximum weight?