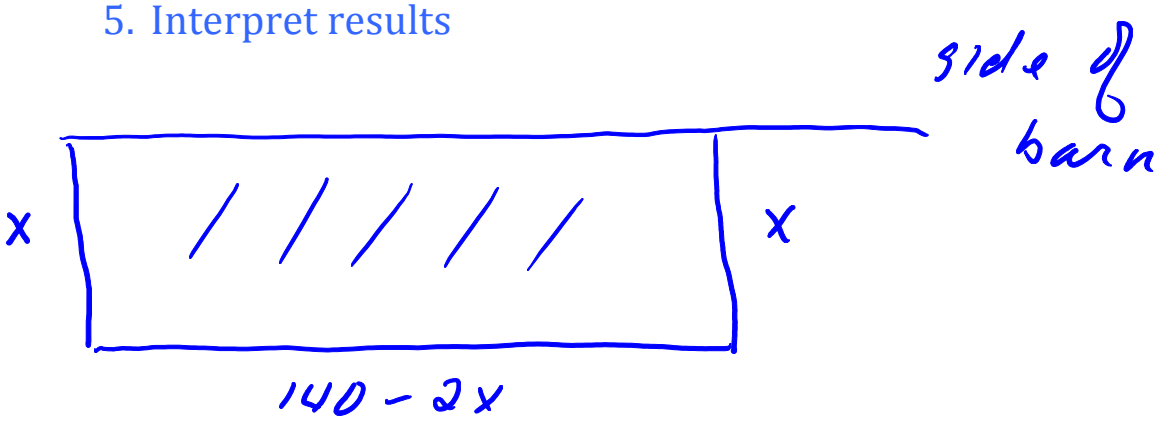
A farmer has 140 feet of fencing to construct a rectangular pen up against the straight side of a barn, using the barn for one side of the pen. The length of the barn is 120 feet. Determine the dimensions of the rectangle of maximum area that can be enclosed.

Problem Solving, 5 Steps

1. Understand
2. Choose variable (s)
3. Obtain a mathematical description
4. Do the math
5. Interpret results



$A(x) = x(140-2x) = 140x - 2x^2$

Determine x so that $A(x)$ is a maximum, $0 < x < 120$.

$A'(x) = 140 - 4x = 0$,

$x = 35$

Choose dimensions to be 35 y 70.