Lesson 6-9 → 3-Sided Rectangular Fences

You are building a fence along a barn.
You have 180 meters of fence.

You want the greatest area possible

1 length = ___ m

Both widths: ___ m

$w + w + l = 180$ or $l = 180 - 2w$

$\text{Area} = lw$

$\text{Area} = (180 - 2w)w$

$\text{Area} = (180 - 2w)(w + 0)$

$\text{Area} = -2(-90 + w)(w + 0)$

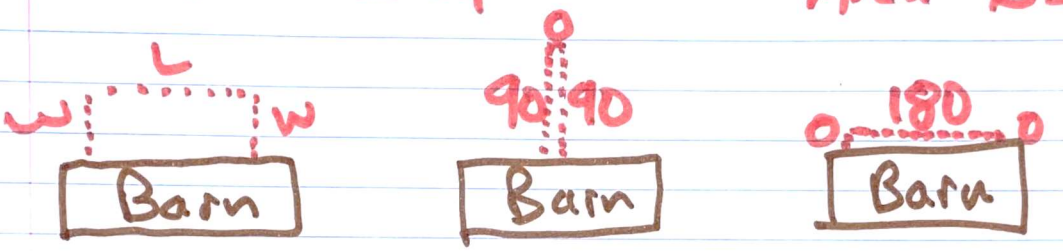
$\text{Area} = -2(w - 90)(w + 0)$

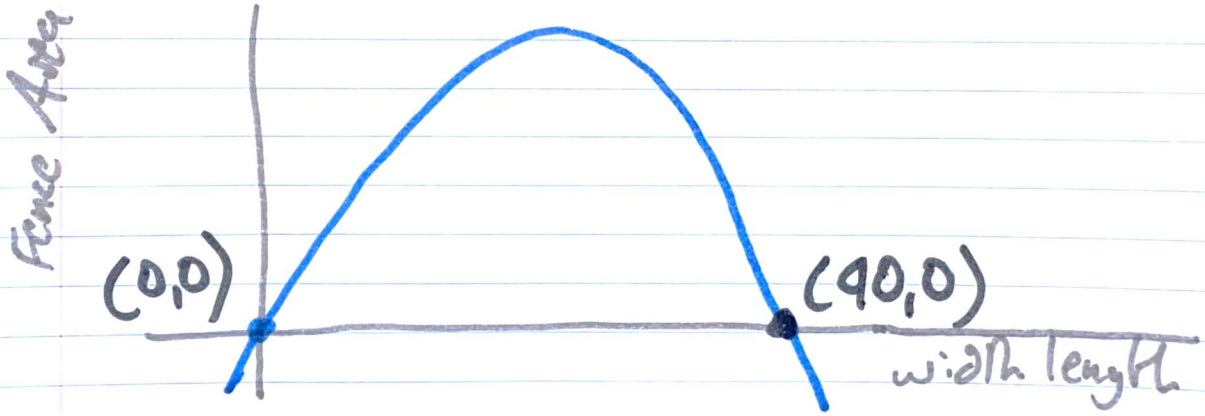
Area = $-2(w-90)(w+0)$

first root (90,0) second root (0,0)

width 90 m
Area 0 sq m

width 0 m
Area 0 sq m





Line of symmetry $X=45$

fence should have width of 45

$w+w+L=180$ $45+45+L=180$

fence should have length of 90

Area: LW Area: $90 \cdot 45$ Area: 4050