

Correct. The area enclosed by the fence is $(40 + 2x)(20 + 2x) = 1,500$.

Multiply out: $800 + 120x + 4x^2 = 1,500$, so $-700 + 120x + 4x^2 = 0$

Divide by 4 and rearrange terms: $x^2 + 30x - 175 = 0$

Use the Quadratic Formula:

$$x = \frac{-30 \pm \sqrt{30^2 - 4 \cdot 1 \cdot (-175)}}{2 \cdot 1} = \frac{-30 \pm \sqrt{1,600}}{2}$$

So $x = \frac{-30 \pm 40}{2} = 5$ or -35 . The negative solution is impossible, so $x = 5$ feet.