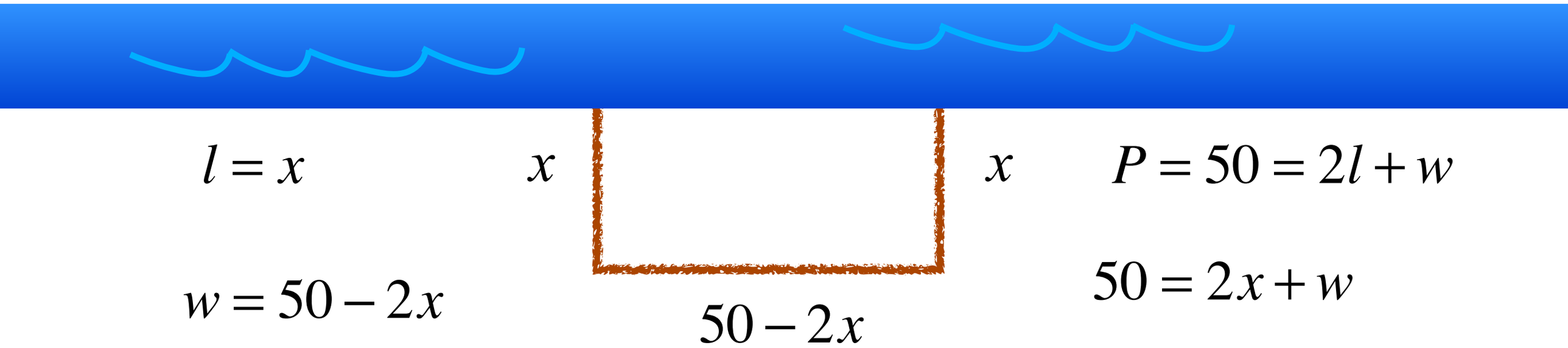
This example is like the explanation screencast with a slight wrinkle

It is much like Example 1 on page 167

Your 50 feet of fence must now enclose a rectangular space along the bank of a river. What is the maximum area that you can enclose?



$$A(x) = lw = x(50 - 2x)$$

Consider $A(x)$ to be the area formula as a function of x.

What is the domain?

$$0 < x < 25 \ \ feet$$

How do we find the maximum value of $A(x)$?

$$A(x) = 50x - 2x^2$$

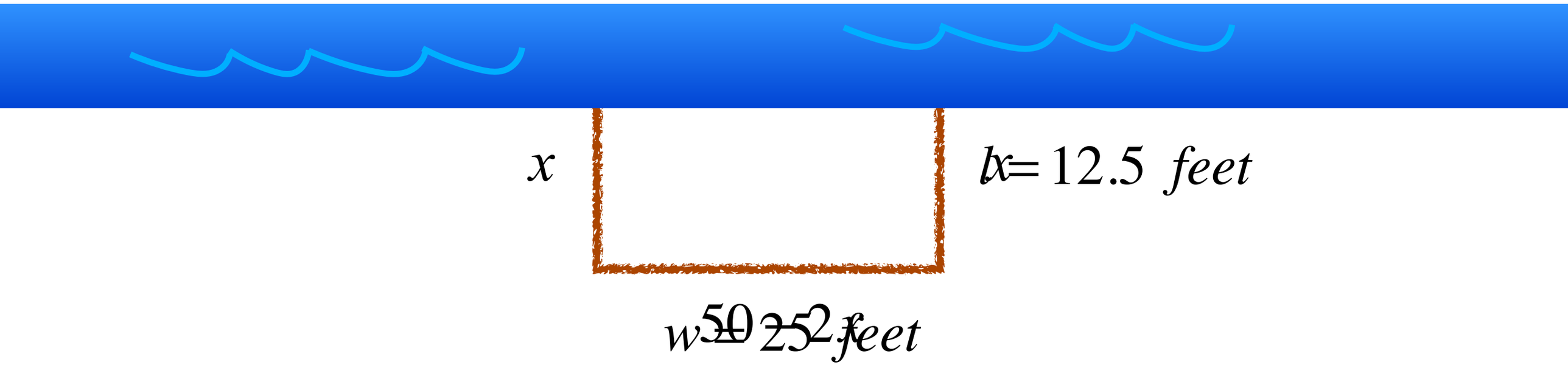
$$A'(x) = 50 - 4x$$ Take the *derivative!*

$$0 = 50 - 4x$$ Set it to zero and solve for x.

$$x = 12.5 \ \ feet$$

Since $x = 0, 25$ would give us $A(x) = 0$, this value must give a local maximum for $A(x)$

Your 50 feet of fence must now enclose a rectangular space along the bank of a river. What is the maximum area that you can enclose?



$$A_{\max} = 312.5\ feet^2$$