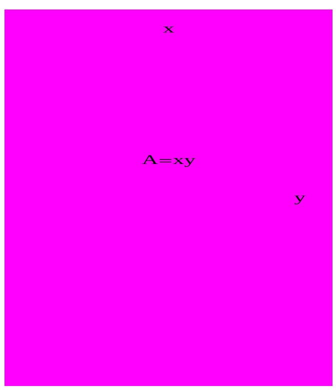
x	f(x)
-1	$f(-1) = 1$
0	$f(0) = 0$
2	$f(2) = 2$

Since 0 is the smallest value we see for $f(x)$ in this chart, we have that $x = 0$ is the absolute minimum of f(x). Since 2 is the largest value this means $x = 2$ is an absolute maximum of f(x).

ExampleA crazy billionaire gives you 10 meters of gold wire and asks you to construct a rectangle with maximum area. If you succeed, he'll give you and your math professor $1,000,000. What rectangle will you construct? What will be its dimensions and area?

Let's assume that you will want to win the money, and hence you'll try to maximize the area of the resultant rectangle. How will you do this? Let's call x the length of the rectangle and y its width.



One can see that the resultant rectangle has area $A = xy$. We would like to maximize this function, but we don't know how to in its current form: it's a function of two variables, and we don't know how to maximize such a function. So what do we do?

The fact that we have 10 meters of wire comes to the rescue, since it tells us the perimeter of our figure is 10. Specifically, we have $10 = 2x + 2y$. We can now solve for y in terms of x and rewrite our area function:
$10 = 2x + 2y \Rightarrow y = 5 - x$

and hence the area $A(x) = xy = x(5 - x) = 5x - x^2$ is the kind of function we can maximize, but first we need to know the domain of the function. For