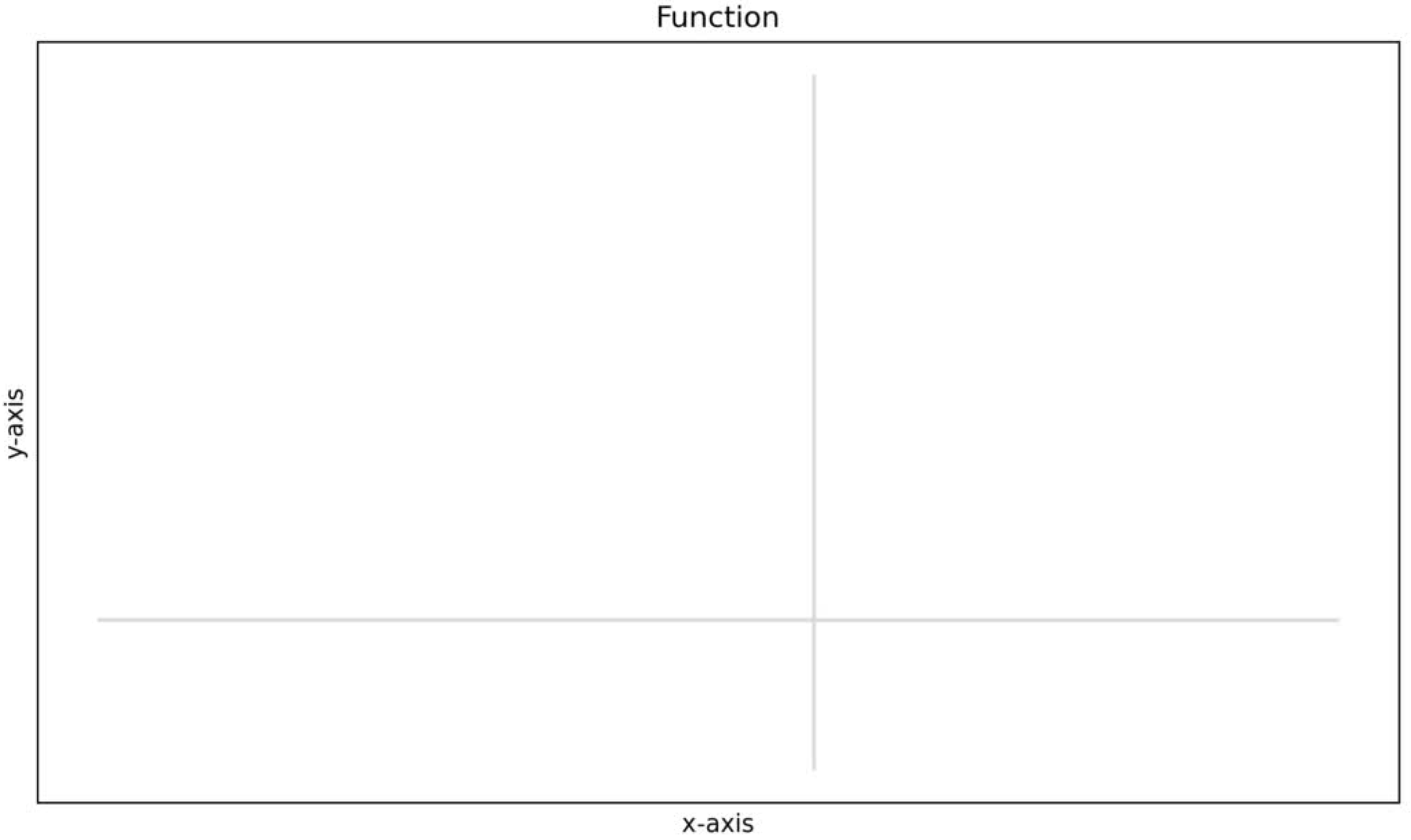
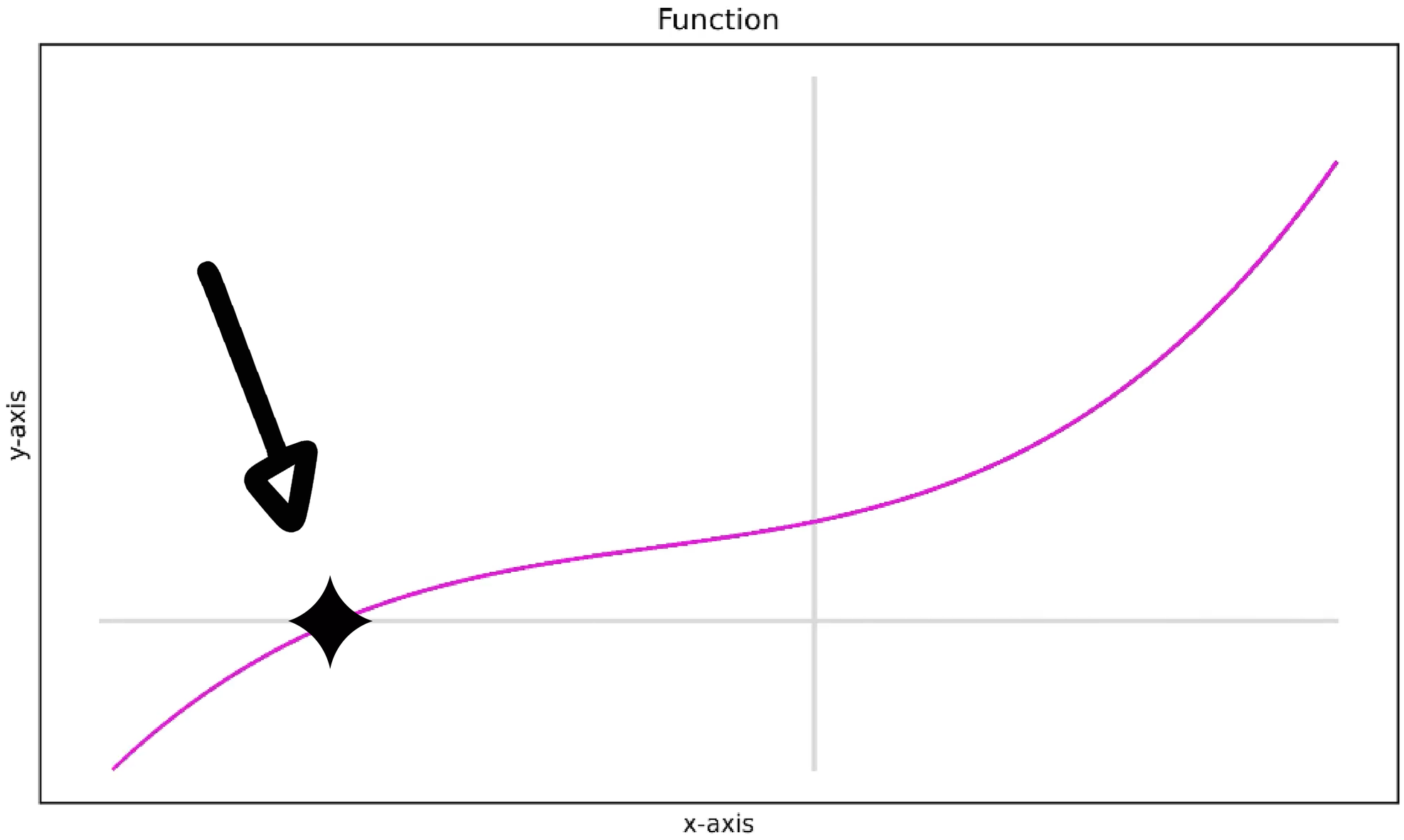
Newton's Method

Let's consider a Function


Function
y-axis
x-axis

Suppose we want to find the root of that function

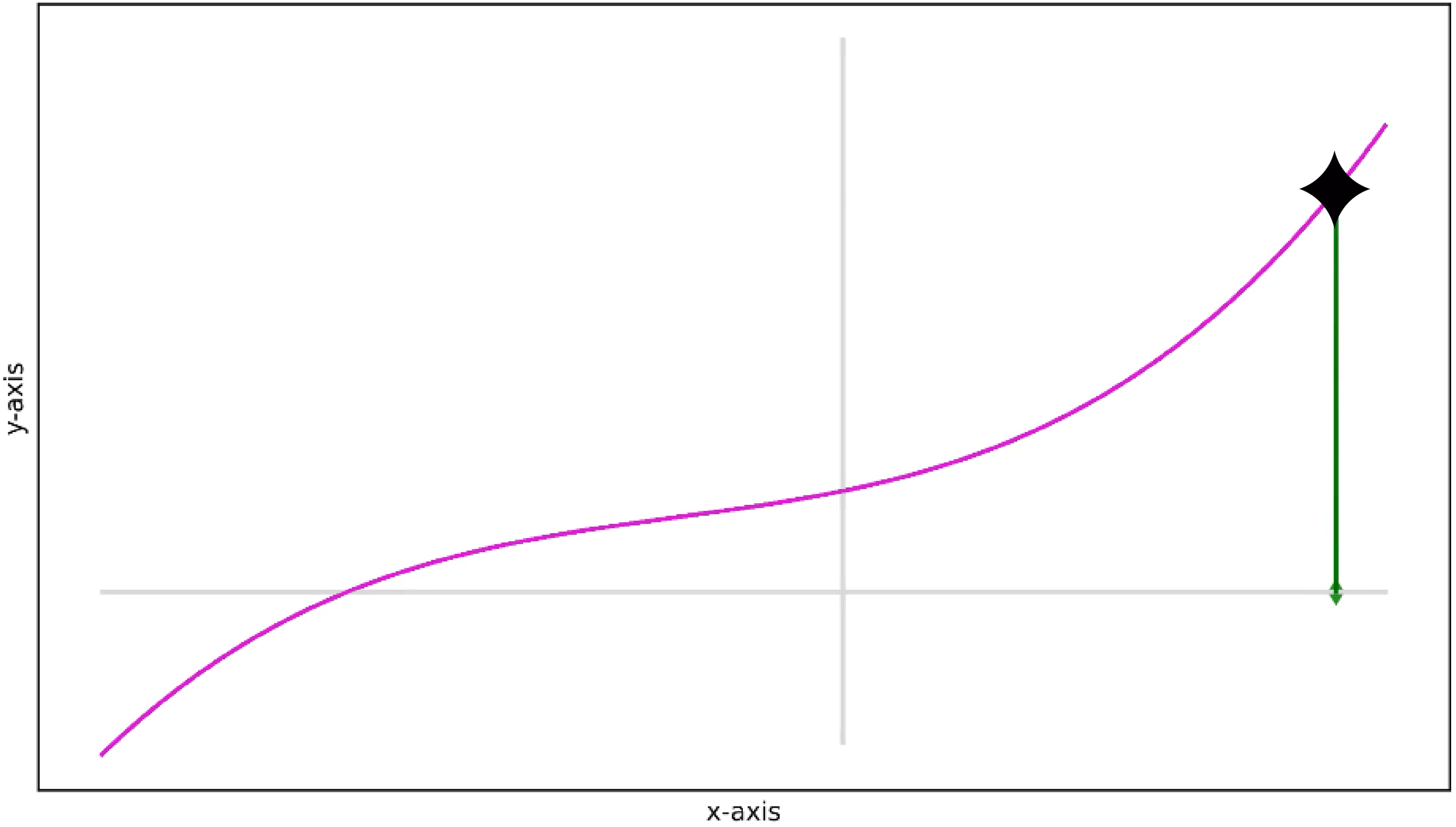
The root is simply the point where the function touches the x-axis


Function
y-axis
x-axis

So, that was the root

But how to get there

Let's try to guess it

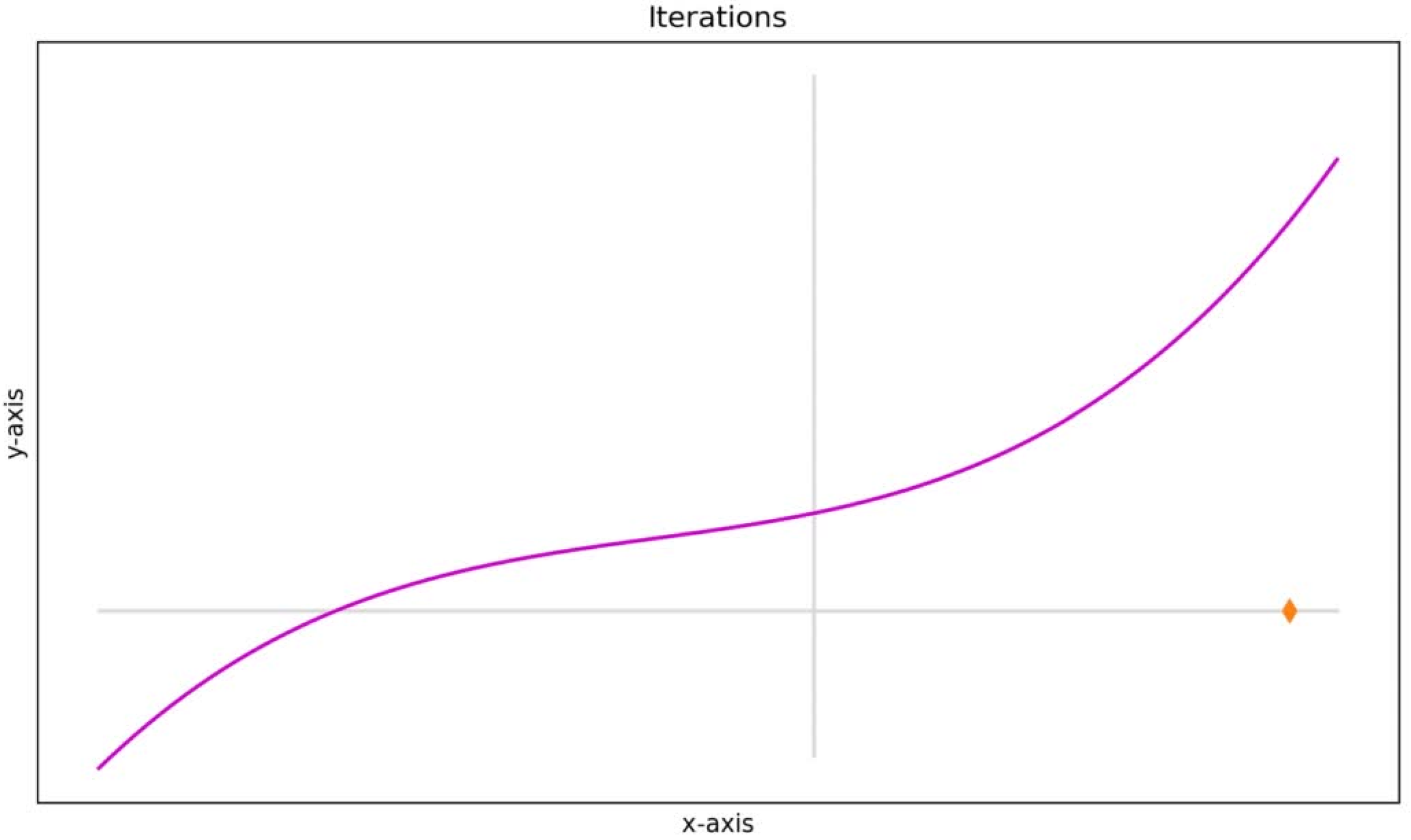

y-axis
x-axis

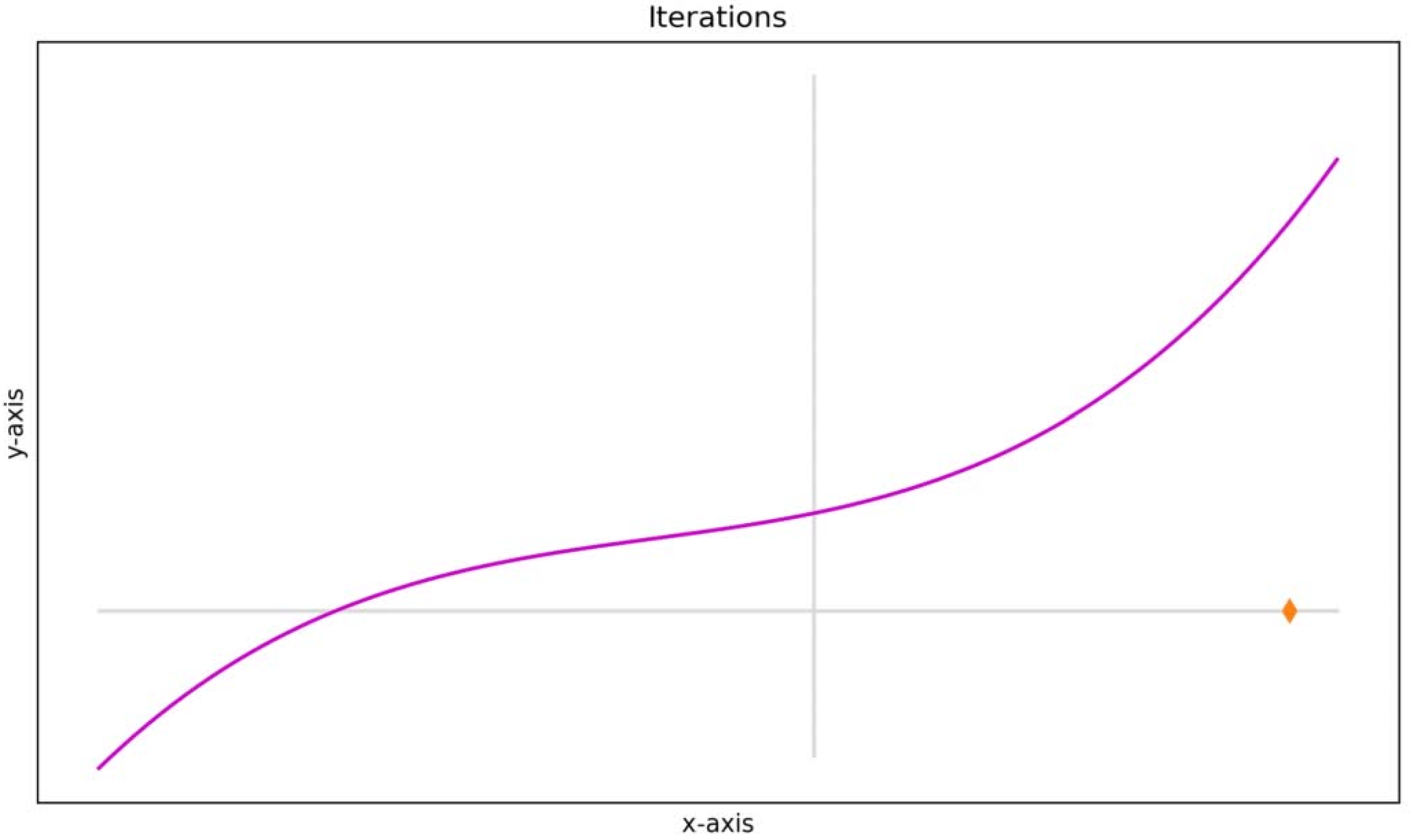
Well that's not going to work

We may draw a tangent to the function at that point

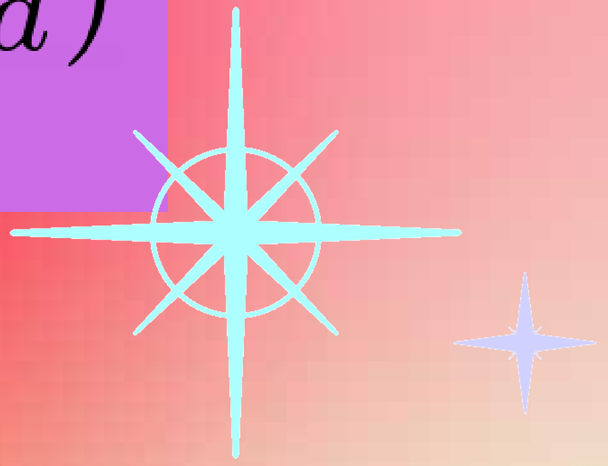
This tangent will cut the x-axis at some point. That will be the new guess value.

Then repeat the process untill you get to the root!!!!

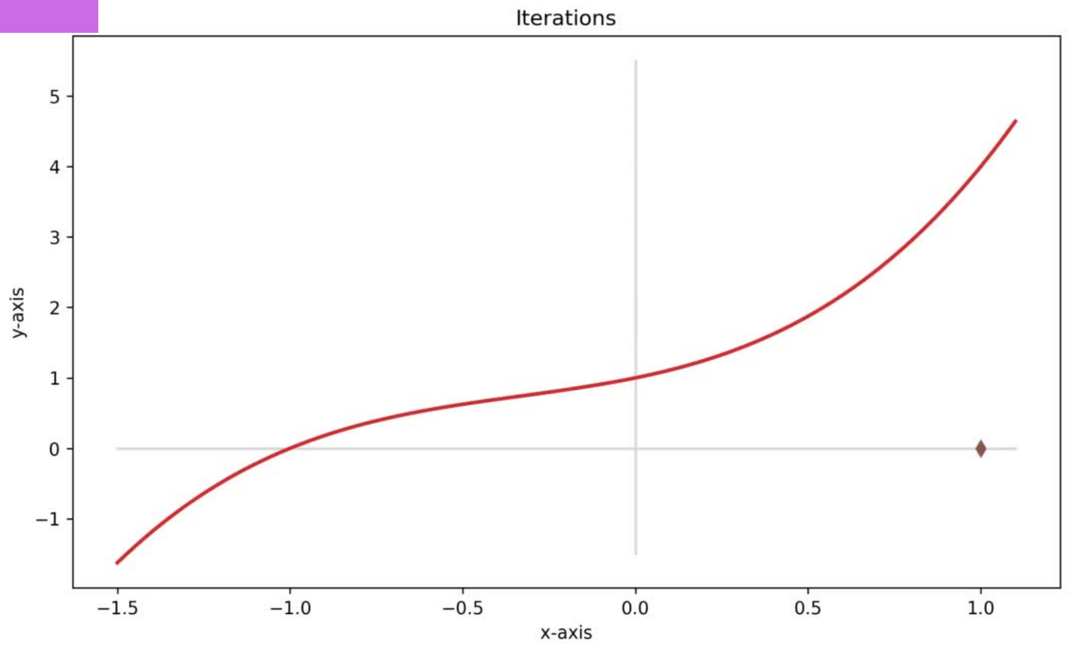

Iterations
y-axis
x-axis

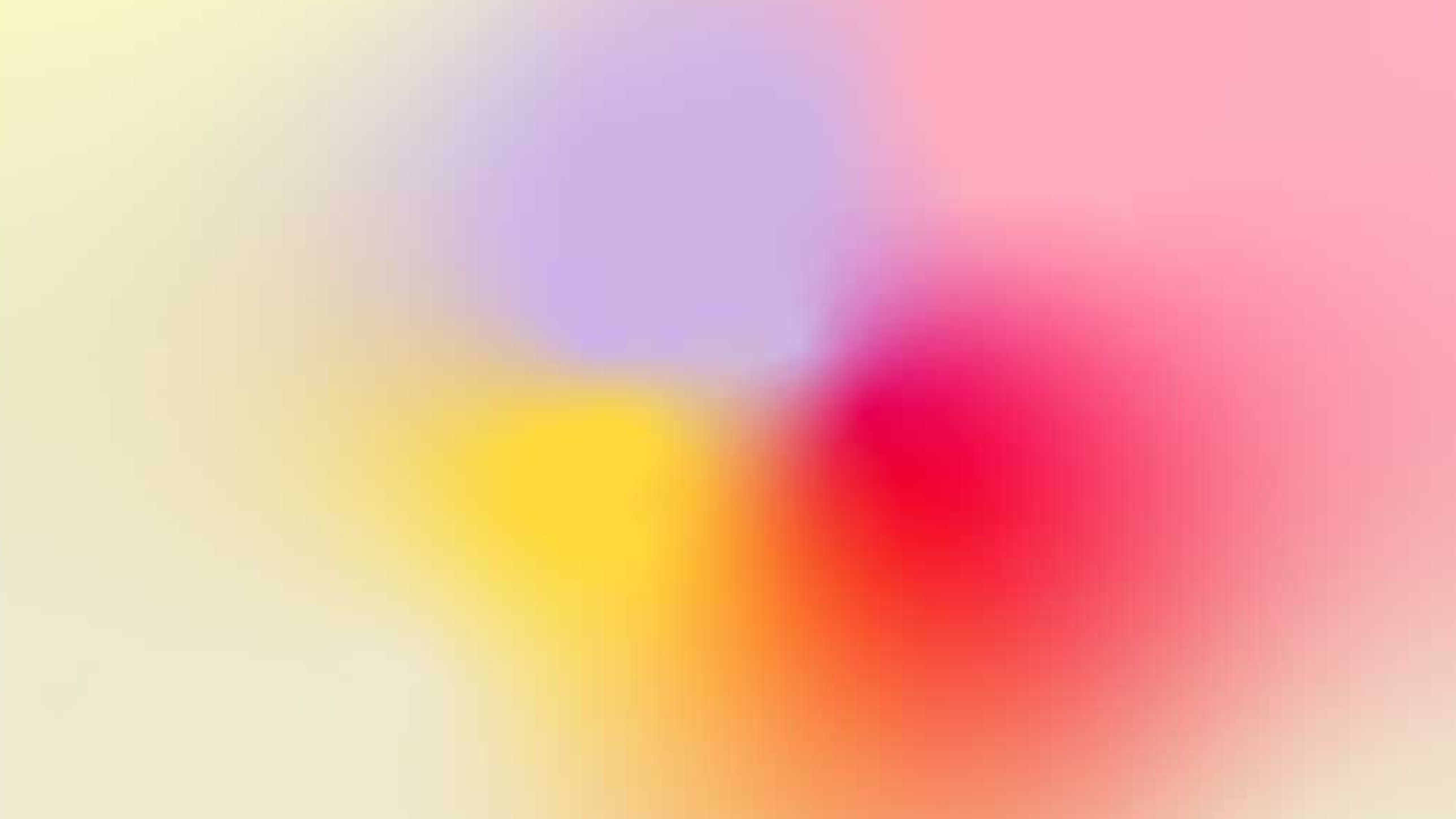

Iterations
y-axis
x-axis

$$x_{new} = x_{old} - \frac{f(x_{old})}{f'(x_{old})}$$



Thank You For Watching





In 2 Min

Newton's Method

Newton-Raphson Method