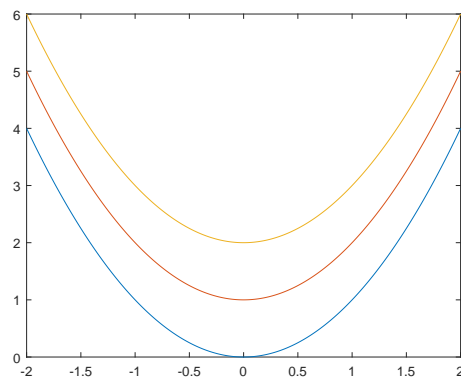


Section 5.4 part B: Why add  $c$ ?

Here is the graph of  $f(x) = x^2$ ,  $g(x) = x^2 + 1$  and  $h(x) = x^2 + 2$ .



The important thing to notice is that each one has the same slope, so if I tell you the derivative is  $2x$ , you don't know which function that  $2x$  came from. That uncertainty forces us to add the unknown constant  $c$ .