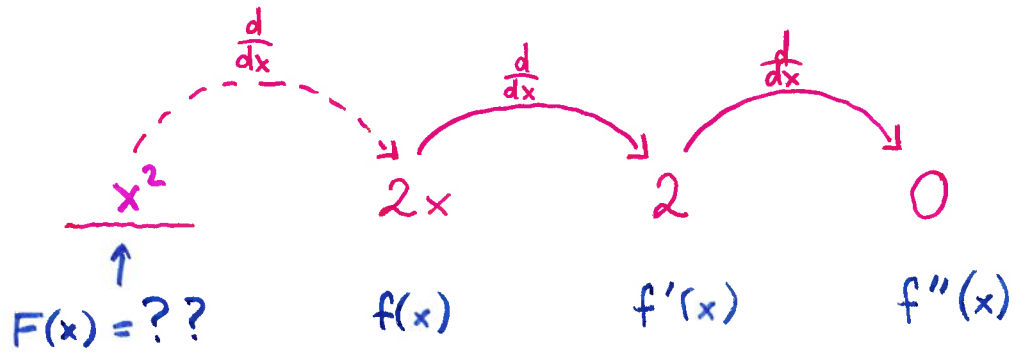


Can you think of an function  $F(x)$  with

$$F'(x) = 2x?$$

In other words, can you think of an "antiderivative" of  $f(x) = 2x$ ?



$F(x) = x^2$       Check       $F'(x) = 2x = f(x)$       ✓

$F(x) = x^2 + 1$        $F'(x) = 2x + 0$       ✓

$F(x) = x^2 + 2$

$F(x) = x^2 + C$  where  $C$  is any constant

FTC II says that  $F(x) = \int_a^x 2t \, dt$  is  
an antiderivative:  $F'(x) = 2x$

If  $a = 0$

