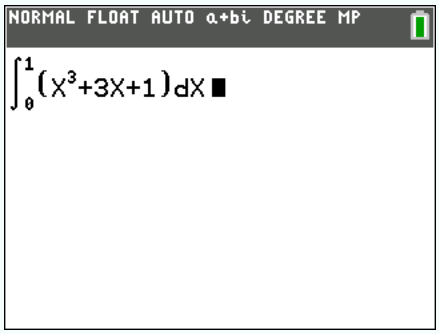
5.5 Definite integrals

5.5.1 Compute the definite integral of a function

Suppose you want to compute the following definite integral:

$$\int_0^1 (x^3 + 3x + 1)\mathrm{d}x$$

In the main screen, press test A math, `fnInt(`, and fill the parameters as follows:



The result should be 2.75.

5.5.2 Draw the area under a curve

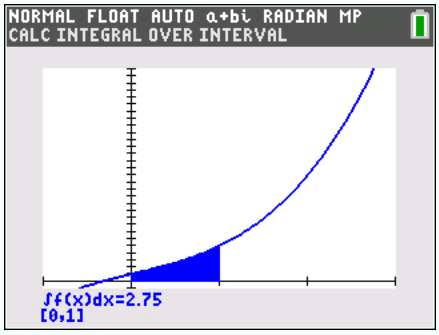
Suppose you want to draw the area between 0 and 1 of the following function:

$$f(x) = x^3 + 3x + 1$$

① Enter the function by pressing stat plot f1 y=

② choose an appropriate window (with tblset f2 window). Here we chose `Xmin=-1`, `Xmax=3`, `Ymin=-1` and `Ymax=30`

③ Press table f5 graph, 2nd, calc f4 trace, `∫f(x)dx`. Press catalog _ 0 entry solve enter to set lower limit at $x = 0$, and L1 Y 1 entry solve enter to select upper limit at $x = 1$. The following should be displayed:



`2.75` is the area of the blue region.

`[0,1]` is the interval