

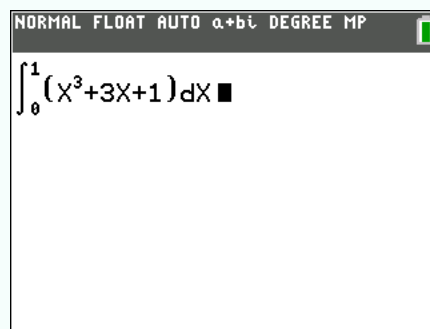
5.5 Definite integrals

5.5.1 Compute the definite integral of a function

Suppose you want to compute the following definite integral:

$$\int_0^1 (x^3 + 3x + 1)dx$$

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



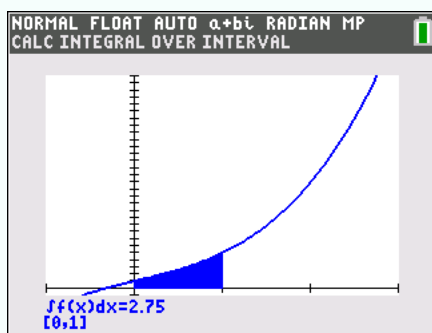
The result should be 2.75.

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** **entry solve** **0** **enter** to set lower limit at $x = 0$, and **L1** **y** **1** **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