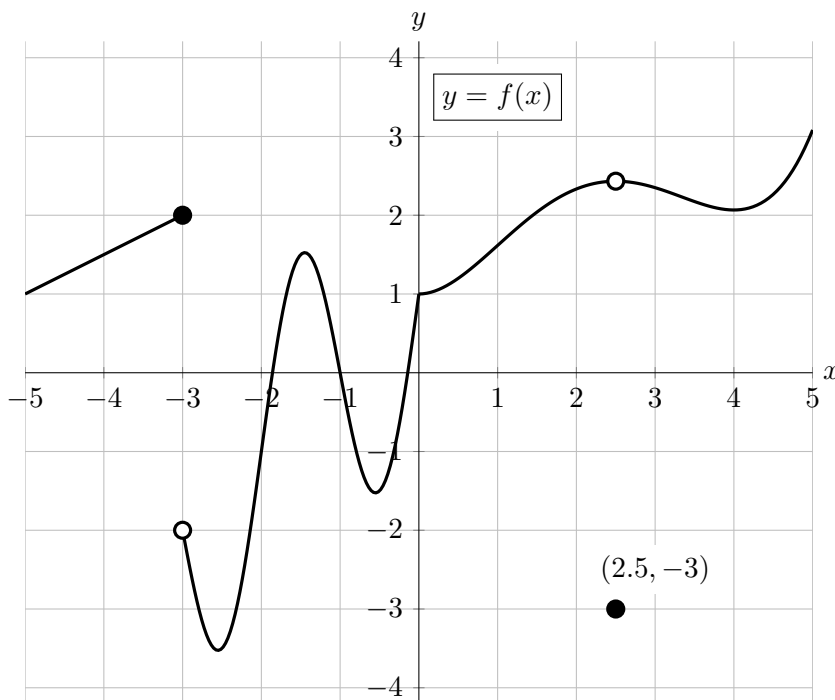


1. [9 points] A portion of the graph of a function  $f$  is shown below.



Throughout this problem, you do not need to explain your reasoning.

For each of parts **a.**– **d.** below, circle all of the listed values satisfying the given statement. If there are no such values, circle NONE.

**a.** [2 points] For which of the following values of  $c$  is  $\lim_{x \rightarrow c^-} f(x) = f(c)$ ?

- $c = -3$     
   $c = -1$     
   $c = 0$     
   $c = 1$     
   $c = 2.5$     
  NONE

**b.** [2 points] For which of the following values of  $c$  is  $f(x)$  continuous at  $x = c$ ?

- $c = -3$     
   $c = -1$     
   $c = 0$     
   $c = 1$     
   $c = 2.5$     
  NONE

**c.** [2 points] For which of the following values of  $c$  does  $f(x)$  appear to be differentiable at  $x = c$ ?

- $c = -3$     
   $c = -1$     
   $c = 0$     
   $c = 1$     
   $c = 2.5$     
  NONE

**d.** [3 points] Consider the quantities defined as follows:

- I. The number 0.
- II.  $f(1)$ .
- III.  $\int_{-1}^1 f(x) dx$ .
- IV. The left-hand Riemann sum with 2 equal subintervals for  $\int_{-1}^1 f(x) dx$ .
- V. The right-hand Riemann sum with 2 equal subintervals for  $\int_{-1}^1 f(x) dx$ .

Rank the quantities in order from least to greatest by filling in the blanks below with the options I–V. You do not need to show your work.

**I**  <  **III**  <  **IV**  <  **II**  <  **V**