

3. [12 points] Representative values of the derivative of a function  $f(x)$  are shown in the table below. Assume  $f'(x)$  is a continuous function and that the values in the table are representative of the behavior of  $f'(x)$ .

$x$	0	0.5	1	1.5	2	2.5	3
$f'(x)$	1	0.3	0	-0.1	-0.15	-0.12	-0.10

- a. [6 points] Estimate the location of the global maximum and minimum of  $f(x)$  on the closed interval  $[0, 3]$ . Justify your answers based on the data in the table.

- b. [6 points] Can you tell from these data if  $f(x)$  has any inflection points? If so, estimate the location of any inflection points and indicate how you know their locations. If not, explain why not.