

2. [12 points] Consider the following table giving values, rounded to three decimal places, of a function  $f(x)$ .

$x$	0	0.5	1
$f(x)$	0	0.247	0.841

- a. [3 points] Estimate  $f'(1)$ . Be sure it is clear how you obtain your answer.
- b. [4 points] Estimate  $f''(1)$ . Again, be sure that it is clear how you obtain your answer.
- c. [3 points] Estimate  $f(1.25)$ , being sure your work is clear.
- d. [2 points] Based on your work in (a) and (b), is your estimate in (c) an over- or under-estimate? Explain.