

1. [15 points] Below are a table of values for a function $f(x)$ which is **odd** and twice differentiable.

| | | | | | |
|---------|---|---|-----|---|---|
| x | 0 | 1 | 2 | 3 | 4 |
| $f(x)$ | 0 | 2 | -1 | 4 | 1 |
| $f'(x)$ | 1 | 5 | e | 2 | 0 |

Use the table to compute the following quantities. Show your work.

- a. [4 points] Approximate the integral $\int_{-1}^1 f(2x+2)dx$ using MID(2). Write out each term in your sum.

b. [4 points] $\int_{-3}^3 f'(x)(2x+2)dx$.

c. [3 points] $\int_{-1}^1 (x+1)f'((x+1)^2)dx$.

- d. [4 points] The average value of $(f(x)+1)^2 f'(x)$ on $[2, 4]$.