1. [14 points] Let $f(x)$ be a twice-differentiable function. Use the table to compute the following expressions. Show your work.

x	0	1	2	3	4	5	6	7	8	9
$f(x)$	1	2	4	11	1	3	5	4	2	3
$f'(x)$	2	3	7	4	-5	2	1	-2	-3	1

a. [3 points] $\displaystyle \int_1^8 \frac{f'(\sqrt[3]{x})}{\sqrt[3]{x^2}}\, dx$

Answer: **a.** _____

b. [3 points] $\displaystyle \int_7^9 \frac{12 f'(x)}{(f(x))^2}\, dx$

Answer: **b.** _____

c. [3 points] $\displaystyle \int_0^3 x f''(x)\, dx$

Answer: **c.** _____

d. [5 points] The average value of $\displaystyle \frac{2f'(x)}{(f(x))^2 + f(x)}$ on $[4, 6]$.

Answer: **d.** _____