1. [9 points] Some values of the function $g(x)$ and its derivative are given in the table below. Suppose that both $g(x)$ and $g'(x)$ are continuous.

x	1	3	5	7	9
$g(x)$	3	1	4	2	5
$g'(x)$	-2	0	3	-1	4

Using the information given above, find the following. Be sure to **show all of your work.** Your answers should not involve the letter g, but you **do not need to simplify them.**

a. [3 points] Suppose $F(x) = \displaystyle\int_1^{x^2} g(t)\, dt$. Find $F'(3)$.

Answer: _____

b. [3 points] Find $\displaystyle\lim_{x\to 1} \frac{3\ln(x) + g(x) - 3}{x - 1}$.

Answer: _____

c. [3 points] Use MID(2) to find the approximate value of $\displaystyle\int_1^9 \frac{g(x)}{1+x^3}\, dx$. Write out all the terms in your sum and do not attempt to simplify.

Answer: _____