1. [12 points] Let $g(x)$ be a **differentiable** function, and let $G(x)$ be a **continuous antiderivative** of $g(x)$. Some values of $g(x)$ and $G(x)$ are given in the table below:

x	-2	-1	0	1	2
$g(x)$	0	$\sqrt{3}$	4	5	-1
$G(x)$	π	$1/2$	-2	0	1

Use the table above to answer the following questions. Write your answers in **exact form**. If there is not enough information to complete a problem, write "NEI." Your answers should not involve the letters g or G, but you do not need to simplify your final answers. Show all your work.

a. [3 points] Compute the **average value** of $g'\big(g(x)\big) \cdot g'(x)$ on the interval $[-2, 2]$.

Answer: _____

b. [3 points] Compute $F'(1)$, where $F(x) = \displaystyle\int_{x^3 - 2}^{4} G(t)\, dt$.

Answer: _____

c. [3 points] Approximate $\displaystyle\int_{-2}^{2} G(x)\, dx$ using TRAP(2).

Answer: _____

d. [3 points] Compute $\displaystyle\lim_{x \to \infty} x\, G(1 + \tfrac{1}{x})$.

Answer: _____