1. [13 points] Let $g(x)$ be a differentiable, **odd** function and let $G(x)$ be an anti-derivative of $g(x)$ with $G(2) = 0$. A table of values for $g(x)$ and $G(x)$ is provided below. **Be sure to show all of your work**.

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

a. [2 points] Write down a formula for $G(x)$ in terms of the function $g(t)$.

$G(x) =$ _____

b. [2 points] Compute $\int_0^1 g(x)dx$.

c. [3 points] Compute $\int_{-4}^2 g(x)dx$.

d. [3 points] Compute $\int_1^3 xg'(x)dx$.

e. [3 points] Compute $\int_0^1 g(3x)dx$.