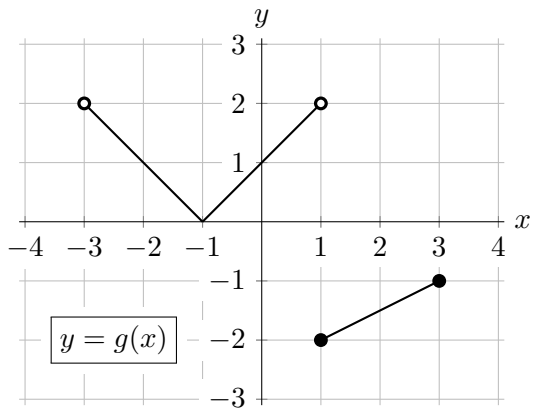
1. [7 points] The entire graph of a function $g(x)$ is shown below to the left. Also shown is a table of some values for a different function $h(x)$. Assume that the function $h(x)$ is invertible.



x	-3	-1	0	1	3	4
$h(x)$	7	5	3	0	-2	-3

a. [3 points] Find the domain of $g(x)$ and range of $g(x)$. Give your answers using interval notation or using inequalities. *You do not need to explain or justify your answer.*

Answer: $g(x)$ has domain _____ and range _____

b. [4 points] Find each of the following, or write N/A if a value does not exist or there is not enough information to find it. *You do not need to show work.*

i. $h^{-1}(-3)$

Answer: $h^{-1}(3) =$ _____

ii. $g(h(0))$

Answer: $g(h(0)) =$ _____

iii. all values of x so that $g(h(x)) = 1$

Answer: $x =$ _____

2. [5 points] On the axes below, sketch the graph of a single possible function $y = f(x)$ satisfying all the listed properties.

- $f(0) = 1$
- the average rate of change of $f(x)$ on $[-4, 0]$ is 1
- $f(x)$ is concave up for $-4 < x < 0$
- $f(x)$ is invertible (that is, it has an inverse)
- $f(x)$ has a constant rate of change for $0 < x < 4$