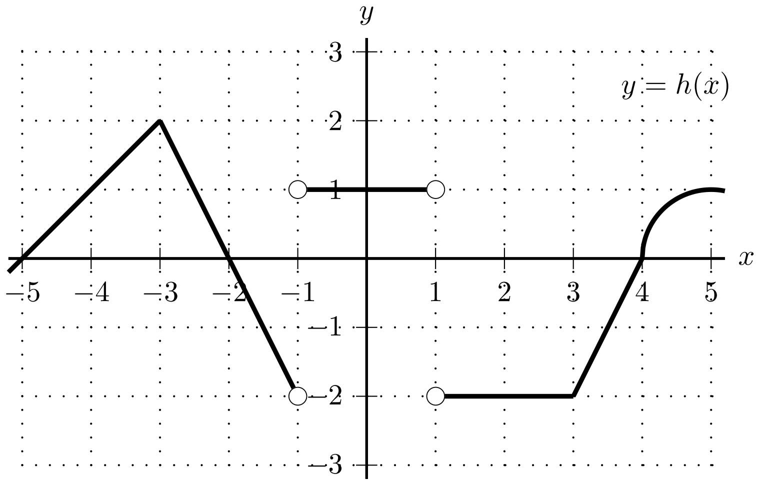
5. [9 points] The graph of a portion of $y = h(x)$ is shown below.



Note: The portion of the graph of $h(x)$ between $x = 4$ and $x = 5$ is part of a circle of radius 1 centered at the point $(5, 0)$.

Let $H(x)$ be the continuous antiderivative of $h(x)$ with $H(0) = 2$.

a. Complete the following table with the exact values of $H(x)$.

x	-5	-4	-3	-2	-1	0	1	2	3	4	5
$H(x)$	-1	-0.5	1	2	1	2	3	1	-1	-2	$-2+\frac{\pi}{4}$

b. On the axes below, sketch the graph of $y = H(x)$. Be sure that you pay close attention to each of the following:

- where $H(x)$ is and is not differentiable
- the values of $H(x)$ from the table above
- the sign of $H(x)$, where $H(x)$ is increasing/decreasing/constant, and the concavity of $H(x)$