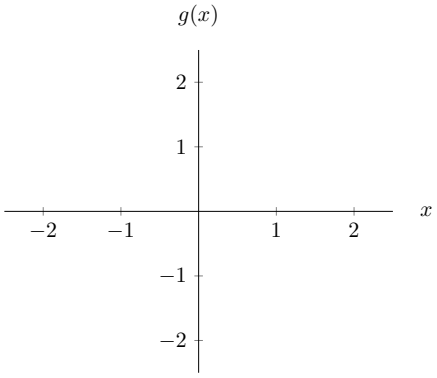
10. [4 points] For each part, draw a function on the given axes that satisfies the given conditions. Or, if no such function exists, write DNE. Make sure your graphs are clear and unambiguous.

a. [2 points]

A function $g(x)$ that satisfies

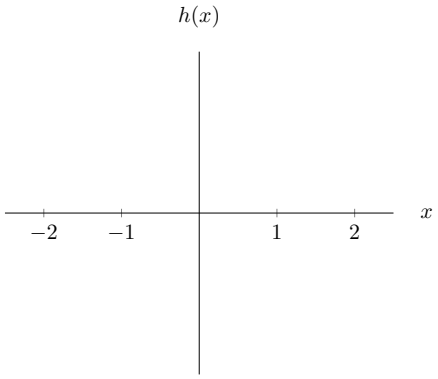
- $\lim_{x \to -1^+} g(x) = 1$ and
- $\lim_{x \to -1^-} g(x) = -2$.



b. [2 points]

A function $h(x)$ that satisfies

- $\lim_{x \to a} h(x)$ exists for every $-2 < a < 2$ and
- $h(x)$ is not continuous at $x = 1$.



11. [6 points]

Suppose that $T(x) = A\cos\left(\frac{\pi}{2}x\right) + C$, where A and C are constants. To the right is a table of values for $T(x)$.

x	0	2	3
$T(x)$	10	-2	4

a. [1 point] What is the period of $T(x)$?

Answer: period = _____

b. [2 points] Find the values of A and C.

Answer: $A =$ _____ **Answer:** $C =$ _____

c. [3 points] Let $Q(x)$ be the quadratic approximation of $T(x)$ at $x = 2$. Find a formula for $Q(x)$. Your answer should not include the constants A or C.

Answer: $Q(x) =$ _____