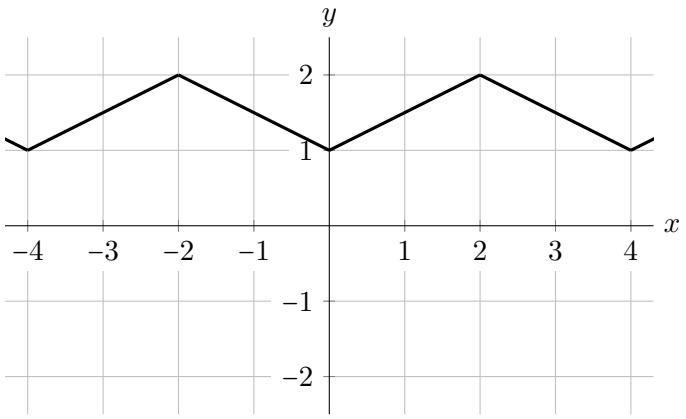
6. [6 points] The function $h(x)$ is a periodic function which is defined for all real numbers. The period of $h(x)$ is 4. A portion of the graph of $h(x)$ is shown on the graph below.

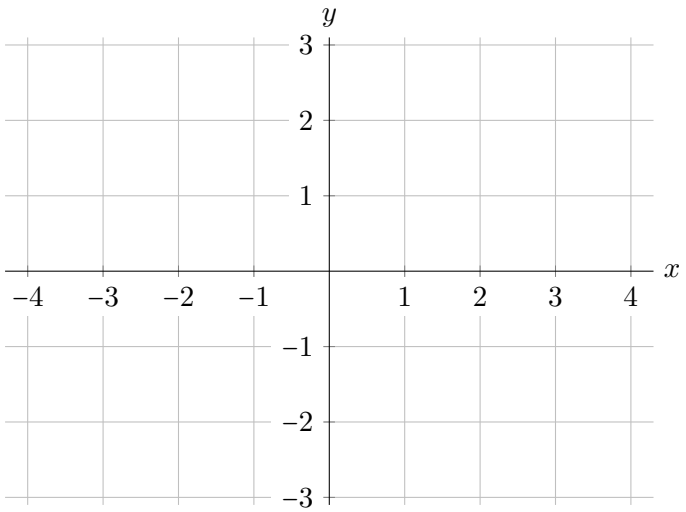


a. [3 points] Let $j(x)$ be the function whose graph is obtained by performing the following transformations to the graph of $h(x)$, in the following order:

1. Horizontal compression by a factor of 1/2
2. Vertical reflection across the x-axis
3. A vertical shift up by 1

On the axes below, sketch a graph of $j(x)$.

Feel free to use the upper set of axes for sketching intermediate steps and make sure your final graph is clearly indicated on the axes below.



b. [3 points] The function $j(x)$ is also periodic. What are the period, amplitude and midline of $j(x)$?

Period: _____ **Amplitude:** _____ **Midline:** $y =$ _____