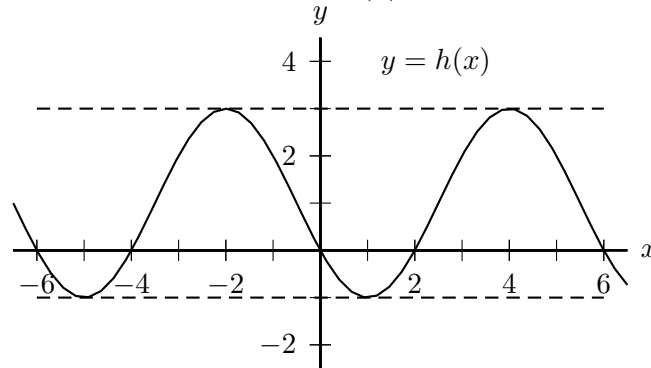
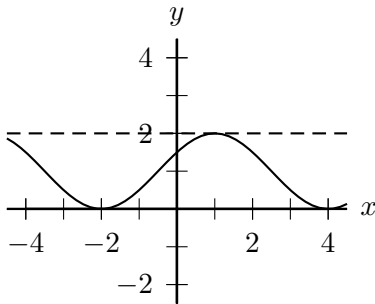


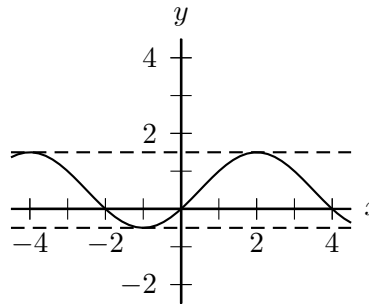
9. [5 points] Note that throughout this problem, you are not required to show your work. A portion of the graph of a sinusoidal function $h(x)$ is shown below.



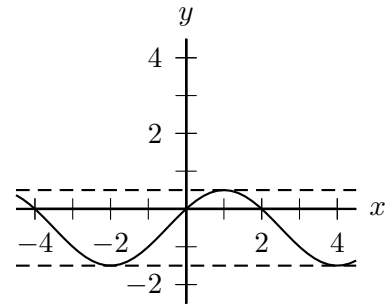
- a. [2 points] Which, if any, of the figures below shows part of the graph of $y = -\frac{1}{2}h(x)$? Note that the scale is smaller than in the original graph above. Be sure to pay attention to the scale indicated on the axes.



(Option A)



(Option B)



(Option C)

Circle your one final answer below. (Only the answer you circle below will be graded.)

Solution: First, we vertically compress the graph of $h(x)$ by a factor of $\frac{1}{2}$. Then, we reflect the resulting graph across the x -axis.

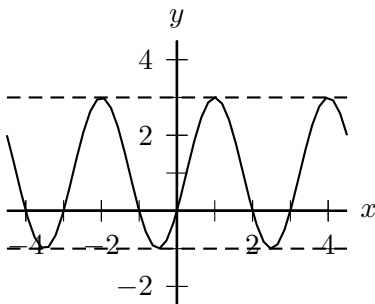
Option A

Option B

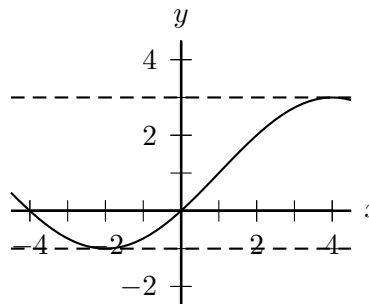
Option C

NONE OF THESE

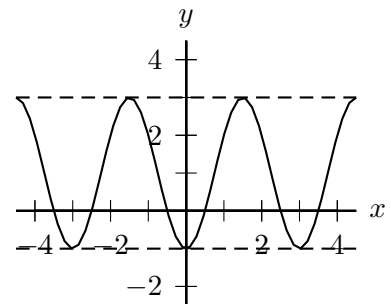
- b. [3 points] Which, if any, of the figures below shows part of the graph of $y = h(2x + 2)$? Note that the scale is smaller than in the original graph above. Be sure to pay attention to the scale indicated on the axes.



(Option A)



(Option B)



(Option C)

Circle your one final answer below. (Only the answer you circle below will be graded.)

Solution: Note that $h(2x + 2) = h(2(x + 1))$. So the graph of $h(2x + 2)$ can be obtained from that of $h(x)$ by first compressing horizontally by a factor of $\frac{1}{2}$ and then shifting the resulting graph 1 unit to the left.

Option A

Option B

Option C

NONE OF THESE