5. [12 points] Note: You do not have to show any work on this page.
   
   a. [6 points] If \((2, -6)\) is a point on the graph of \(y = h(x)\), find a point on the graph of each of the functions below.

   (i) \(\left(\frac{1}{2}, -6\right)\) is a point on the graph of \(y = h(2x)\).

   **Solution:** To obtain the graph of \(y = h(2x)\) from the graph of \(y = h(x)\) we compress horizontally towards the \(y\)–axis by a factor of \(\frac{1}{2}\), moving \((2, -6)\) to the point \((-1, 6)\).

   (ii) \(\left(-\frac{2}{3}, -5\right)\) is a point on the graph of \(y = h(-x) + 1\).

   **Solution:** To obtain the graph of \(y = h(-x) + 1\) from the graph of \(y = h(x)\), we first reflect the graph across the \(y\)–axis (moving the point \((2, -6)\) to the point \((-2, -6)\)) and then shift the resulting graph up by one unit (moving the point \((-2, -5)\) to the point \((-2, -5)\)).

   (iii) \(\left(\frac{3}{2}, \frac{18}{3}\right)\) is a point on the graph of \(y = -3h(x - 1)\).

   **Solution:** To obtain the graph of \(y = -3h(x - 1)\) from the graph of \(y = h(x)\), we first stretch the graph vertically away from the \(x\)–axis by a factor of 3 (moving the point \((2, -6)\) to the point \((2, -18)\)). Then we reflect this graph across the \(x\)–axis (moving the point \((2, -18)\) to the point \((2, 18)\)). Finally, we shift the resulting graph to the right by one unit (moving the point \((2, 18)\) to the point \((3, 18)\)).

b. [6 points] Some data for functions \(g\) and \(k\) is provided in the table below. Use this data to answer the questions that follow.

   \[
   \begin{array}{c|ccc}
   x & 1 & 2 & 3 \\
   \hline
   g(x) & 4 & -1 & -2 \\
   k(x) & 5 & 4 & 1 \\
   \end{array}
   \]

   (i) If \(g(x)\) is an even function, find \(g(-2)\).

   **Solution:** Since \(g\) is even, \(g(-2) = g(2)\) and the table indicates that \(g(2) = -1\). Hence \(g(-2) = -1\).

   **Answer:** \(g(-2) = -1\)

   (ii) Let \(m(t) = 2k(-t + 1)\). Find \(m(-2)\).

   **Solution:** Using the provided formula for \(m(t)\) and the given table, we have
   \[m(-2) = 2k(-(-2) + 1) = 2k(2 + 1) = 2k(3) = 2(1) = 2.\]

   **Answer:** \(m(-2) = 2\)

   (iii) Let \(n(x) = k(x - 1)\). If \(n(x)\) is an odd function, find \(k(-3)\).

   **Solution:** Using the given formula (or the implication that the graph of \(y = n(x)\) results from shifting the graph of \(y = k(x)\) to the right one unit), we have \(k(-3) = n(-2)\). Now \(n\) is odd so \(n(-2) = -n(2)\). Using the formula provided, we find that \(k(-3) = n(-2) = -n(2) = -k(2 - 1) = -k(1) = -5\). Hence \(k(-3) = -5\).

   **Answer:** \(k(-3) = -5\)