11. [9 points] The graphs of functions $g$ and $h$ are shown below.

a. [3 points] Determine whether each of the following statements is True or False.

(i) The function $g$ is invertible on the domain $[1, 6]$.

True  False

(ii) The function $h$ is invertible on the domain $[1, 6]$.

True  False

(iii) The function defined by $g(x) - h(x)$ is an increasing function on the domain $[1, 6]$.

True  False

b. [2 points] Evaluate $g(h(3))$ and $h(3)g(3)$.

Answers: $g(h(3)) = \underline{\phantom{0}}$  $h(3)g(3) = \underline{\phantom{0}}$

Some values for an invertible function $f$ are given in the table below. Use the table together with the graphs of $g$ and $h$ above to answer the questions that follow.

<table>
<thead>
<tr>
<th>$x$</th>
<th>0</th>
<th>1</th>
<th>3</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>$f(x)$</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>

c. [2 points] Evaluate $f^{-1}(g(2))$.

Answer: $f^{-1}(g(2)) = \underline{\phantom{0}}$

d. [2 points] If $j$ is the function defined by $j(x) = 2f(x + 1)$, evaluate $j(4)$.

Answer: $j(4) = \underline{\phantom{0}}$