3. [10 points] In each problem below, some information about a function has been given. This is followed by statements about certain characteristics of the function. Choose the ONE best option in each box. You do NOT need to show any work on this problem.

a. [6 points] The graph of a function $h(r)$ is shown below.

![Graph of function $h(r)$]

<table>
<thead>
<tr>
<th>Circle ONE</th>
<th>Circle ONE</th>
<th>Circle ONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\frac{h(4)-h(1)}{3} &gt; \frac{h(4)-h(2)}{2}$</td>
<td><strong>On the portion of the domain shown, $h(r)$ is</strong></td>
<td>On the portion of the domain shown, $h(r)$ is</td>
</tr>
<tr>
<td>$\frac{h(4)-h(1)}{3} &lt; \frac{h(4)-h(2)}{2}$</td>
<td>$\text{always increasing}$</td>
<td>$\text{always concave up}$</td>
</tr>
<tr>
<td>$\frac{h(4)-h(1)}{3} = \frac{h(4)-h(2)}{2}$</td>
<td>$\text{always decreasing}$</td>
<td>$\text{always concave down}$</td>
</tr>
<tr>
<td>$\text{The relationship between } \frac{h(4)-h(1)}{3} \text{ and } \frac{h(4)-h(2)}{2}$ cannot be determined from the information provided.</td>
<td>$\text{neither of these}$</td>
<td>$\text{neither of these}$</td>
</tr>
</tbody>
</table>

b. [4 points] The amount of time it takes to cook a giant slab of tofu is a function of the weight of the slab. The more a slab of tofu weighs, the longer it takes for it to fully cook. However, as the weight of the tofu slab goes up, the additional time required per extra pound goes down. Let $B(w)$ be the time, in hours, that it takes to cook a giant slab of tofu weighing $w$ pounds.

<table>
<thead>
<tr>
<th>Circle ONE</th>
<th>Circle ONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>$B(w)$ is always increasing.</td>
<td>$B(w)$ is always concave up.</td>
</tr>
<tr>
<td>$B(w)$ is always decreasing.</td>
<td>$B(w)$ is always concave down.</td>
</tr>
<tr>
<td>Neither of the above statements is true.</td>
<td>Neither of the above statements is true.</td>
</tr>
</tbody>
</table>