5. (8 points) Below is a table of values for two functions $f$ and $g$.

<table>
<thead>
<tr>
<th>$x$</th>
<th>$-2$</th>
<th>$-1.5$</th>
<th>$-1$</th>
<th>$-0.5$</th>
<th>$0$</th>
<th>$0.5$</th>
<th>$1$</th>
<th>$1.5$</th>
<th>$2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$f(x)$</td>
<td>$-0.16$</td>
<td>$-0.284$</td>
<td>$-0.5$</td>
<td>$-0.64$</td>
<td>$0$</td>
<td>$0.64$</td>
<td>$0.5$</td>
<td>$0.28$</td>
<td>$0.16$</td>
</tr>
<tr>
<td>$g(x)$</td>
<td>$-0.88$</td>
<td>$-1.0888$</td>
<td>$-1$</td>
<td>$0.32$</td>
<td>$2$</td>
<td>$0.32$</td>
<td>$-1$</td>
<td>$-1.088$</td>
<td>$-0.88$</td>
</tr>
</tbody>
</table>

Use the table to answer the following:

(a) $g(f(-1)) = g(-0.5) = 0.32$

(b) $3g(-1.5) = 3(-1.0888) = -3.2664$

(c) $f(g(0)) = f(2) = 0.16$

(d) $g(2)f(-1) = -0.88(-0.5) = 0.44$

Below is a plot of the functions $f$ and $g$.

(e) Circle ONE of the following

$$f(x) = g'(x) \quad \text{or} \quad g(x) = f'(x)$$

AND explain your reasoning below.

The function $f$ cannot be the derivative of $g$, because $g$ is increasing for $x = -1$ to $x = 0$ (for example), and $f$ is negative there. On the other hand, $g$ is negative when $f$ is decreasing, zero when $f$ changes from decreasing to increasing (near $x = -0.5$), then positive when $f$ is increasing, etc. Thus, $g$ is the derivative of $f$. 