3.) (12 pts) (a) On the axes below, sketch a graph of a single *continuous* function, \( y = f(x) \), which has *all* of the following features:

- \( f(0) = -3 \)
- \( f(-2) = 0 \) and \( f(3) = 0 \)
- \( f \) is decreasing for \( x < 0 \)
- \( f \) is increasing for \( x > 0 \)
- \( f \) is concave up for \( x < 2 \)
- \( f \) is concave down for \( x > 2 \)
- \( f(x) \to 4 \) as \( x \to \infty \)

(b) Is the function you drew in part (a) *invertible*? Explain why or why not.

4.) Data from three functions is shown in the table below. One function is linear, one is a power function, and one is neither of these.

<table>
<thead>
<tr>
<th>( x )</th>
<th>-2</th>
<th>0</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>( f(x) )</td>
<td>16.5</td>
<td>20</td>
<td>24.2</td>
<td>29.3</td>
<td>35.4</td>
<td>42.9</td>
</tr>
<tr>
<td>( g(x) )</td>
<td>17.6</td>
<td>20</td>
<td>22.4</td>
<td>24.8</td>
<td>27.2</td>
<td>29.6</td>
</tr>
<tr>
<td>( h(x) )</td>
<td>4.4</td>
<td>0</td>
<td>4.4</td>
<td>17.6</td>
<td>39.6</td>
<td>70.4</td>
</tr>
</tbody>
</table>

(a) (6 pts) Determine a formula for the linear function. [Be certain to use the appropriate function name—i.e., \( f \), \( g \), or \( h \), from the table.]

(b) (6 pts) Determine a formula for the power function. [Again use the correct function name.]