Section 3.2

Problem Determine whether the following is a function or not.

a. \{((1,2),(2,3),(3,4),(2,4))\}
   solution) This is not function, since 2 goes to both 3 and 4.

b)

<table>
<thead>
<tr>
<th>input</th>
<th>1</th>
<th>2</th>
<th>a</th>
<th>b</th>
<th>x</th>
</tr>
</thead>
<tbody>
<tr>
<td>output</td>
<td>3</td>
<td>5</td>
<td>y</td>
<td>z</td>
<td>a</td>
</tr>
</tbody>
</table>

solution) Yes. It is a function. One input goes to one output only.

c)

solution) No. It is not a function by the vertical line test.

Problem Determine whether the following is a function or not.
You need to show your work to get the full credit.

a. \( y = 3x - 5 \)
   solution) Yes it is a function. If you plug in a number for \( x \), you have only one \( y \).

   Note the it is an equation of line.

b. \( y^2 = 2x^2 + 16 \)
   solution) This is not a function. If you plug in 0 for \( x \), \( y^2 = 16 \). So, \( y = 4, -4 \). Since one input gives two outputs, it is not a function.

c. \( y = 3x^2 - 5 \)
   solution) It is a function. If you plug in a number for \( x \) you have only one \( y \).