Investigation #1 – Lottery Winners

Suppose that a 12 million dollar lottery is split between several winners. Find how much each person receives.

<table>
<thead>
<tr>
<th>Number of Winners</th>
<th>Share of winnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12,000,000</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Describe verbally any the patterns you see. (increasing/decreasing/constant)

Find an equation that relates the share of winnings (y) with the number of winners (x).

Investigation #2 – Mirrors: Angles and Images

Place a small object on the table. Position the two mirrors at the indicated angle. Count the number of objects you see, including the real one and record your results in the table below.

<table>
<thead>
<tr>
<th>Angle</th>
<th>Number of Images</th>
</tr>
</thead>
<tbody>
<tr>
<td>180°</td>
<td></td>
</tr>
<tr>
<td>120°</td>
<td></td>
</tr>
<tr>
<td>90°</td>
<td></td>
</tr>
<tr>
<td>72°</td>
<td></td>
</tr>
<tr>
<td>60°</td>
<td></td>
</tr>
<tr>
<td>45°</td>
<td></td>
</tr>
<tr>
<td>30°</td>
<td></td>
</tr>
</tbody>
</table>

Describe verbally any the patterns you see. (increasing/decreasing/constant)

Find an equation that relates the number of images (y) with the angle (x).