8.11 Homework

1. Each student in a class of 38 students was asked to report how many siblings (brothers or sisters) he or she has. The data are summarized in the table below.

<table>
<thead>
<tr>
<th>Number of Siblings</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probability</td>
<td>0.15</td>
<td>0.35</td>
<td>0.30</td>
<td>0.10</td>
<td>0.05</td>
<td>0.03</td>
<td>0.02</td>
</tr>
</tbody>
</table>

a. Based on the data, estimate the probability that a randomly selected student from this class is an only child.

b. Based on the data, estimate the probability that a randomly selected student from this class has three or more siblings.

2. There are four pieces of bubble gum left in a quarter machine. Two are red, and two are yellow. Chandra puts two quarters in the machine. One piece is for her, and one is for her friend, Kay. If the two pieces are the same color, she is happy because they will not have to decide who gets what color. Chandra claims that they are equally likely to get the same color because the colors are either the same or they are different. Check her claim by doing a simulation.

a. Name a device that can be used to simulate getting a piece of bubble gum. Specify what outcome of the device represents a red piece and what outcome represents yellow.

b. Define what a trial is for your simulation.

c. Perform and list 50 simulated trials. Based on your results, is Chandra’s equally likely model correct?