1. Name: ________________________________

2. Using the survey sample to the right:

   2.1. Determine the probability of selecting an employee, at random, that is between 25 and 34 years old.

<table>
<thead>
<tr>
<th>Employee ages</th>
<th>Frequency, f</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 - 24</td>
<td>54</td>
</tr>
<tr>
<td>25 - 34</td>
<td>366</td>
</tr>
<tr>
<td>35 - 44</td>
<td>233</td>
</tr>
<tr>
<td>45 - 54</td>
<td>180</td>
</tr>
<tr>
<td>55 - 64</td>
<td>125</td>
</tr>
<tr>
<td>65 and older</td>
<td>42</td>
</tr>
</tbody>
</table>

   $\sum f = 1000$

   2.2. Determine the probability of selecting an employee who is not between 25 and 34 years old.

3. If I flip a coin and roll a standard 6 sided die:

   3.1. List the sample space:
3.2. How many outcomes are possible?

3.3. A coin is tossed and a die is rolled. Find the probability of getting a tail and then rolling a 2.

4. The success rate for heart surgery for isolated mitral valve repair at Cleveland Memorial Hospital is 97%.

4.1. Find the probability that three isolated mitral repairs are successful.

4.2. Find the probability that at least one of the three surgeries are successful.
5. A college has undergraduate enrollment of 3500. Of these, 860 are business majors and 1800 are women. Of the business majors, 425 are women.

5.1. Are the events “selecting a woman student” and “selecting a business major” mutually exclusive?

5.2. Explain why:

5.3. If a college news paper conducts a poll and selects students at random to answer a survey. Find the probability that the selected student is a woman or a business major.

6. The following letters make up a word: agmommarm.

6.1. How many distinguishable ways can the letters be arranged?

6.2. What is the probability of randomly selecting the letters so that they spell the correct word?
6.3. Can you guess the word? _______________________________

7. You forgot the combination to the lock to your travel bag. The lock has four dials. You know the first digit for the combination is 3 and you know that one other digit is a 1. How many different combinations are possible?