1. In an intro stats class, the probability that any randomly selected student eats breakfast is 0.57, the probability that any randomly selected student flosses his/her teeth is 0.80. The probability that a student eats breakfast AND flosses is 0.46. What is the probability that a student from this class eats breakfast or flosses their teeth?

\[
P(\text{eat breakfast OR floss}) = P(\text{eat breakfast}) + P(\text{floss}) - P(\text{eat breakfast AND floss})
\]

\[
= 0.57 + 0.80 - 0.46 = 0.91
\]

2. The following table shows, after a recent Super Bowl, a breakdown of TV viewers categorized by sex and interest.

<table>
<thead>
<tr>
<th>Interest was in...</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Game</td>
<td>279</td>
<td>200</td>
<td>479</td>
</tr>
<tr>
<td>Commercials Only</td>
<td>81</td>
<td>156</td>
<td>237</td>
</tr>
<tr>
<td>Didn't Watch At All</td>
<td>132</td>
<td>160</td>
<td>292</td>
</tr>
<tr>
<td>Total</td>
<td>492</td>
<td>516</td>
<td>1008</td>
</tr>
</tbody>
</table>

What is the probability that a viewer was female or did not watch at all?

\[
P(\text{female OR did not watch}) = P(\text{female}) + P(\text{did not watch}) - P(\text{female AND did not watch})
\]

\[
= \frac{516}{1008} + \frac{292}{1008} - \frac{160}{1008}
\]
3. A recent Pack Poll of 1,032 NCSU students found that the proportion of seniors that favor the legalization of marijuana is 0.57 and the proportion of sophomores that favor the legalization of marijuana is 0.46.
   a. What are the odds that a randomly selected NCSU senior favors the legalization of marijuana?
      
      odds that a randomly chosen senior favors legalization
      
      \[ \frac{P(\text{senior favors legalization})}{P(\text{senior favors legalization})} = \frac{0.57}{0.43} = 1.326 \text{ to 1} \]
      
      (on average, for every senior against legalization, 1.326 seniors favor legalization)

   b. What are the odds that a randomly selected NCSU sophomore is against the legalization of marijuana?
      
      odds that a randomly chosen sophomore is against legalization
      
      \[ \frac{P(\text{sophomore is against legalization})}{P(\text{sophomore is against legalization})} = \frac{0.54}{0.46} = 1.174 \text{ to 1} \]
      
      (on average, for every sophomore that favors legalization, 1.174 sophomores are against legalization).

4. The Financial Aid Office at NCSU must update the formula it uses to determine the amount for textbook costs to include in scholarship and grant awards. Based on a survey of NCSU students the Financial Aid Office estimates that 63% of students spent more than $400 for textbooks this semester. What are the odds that a randomly selected NCSU student spent more than $400 for textbooks this semester?
   
   odds that a student spends more than $400 on textbooks
   
   \[ \frac{P(\text{student spends more than $400 on textbooks})}{P(\text{student does not spend more than $400 on textbooks})} = \frac{0.63}{0.37} = 1.7 \text{ to 1} \]
   
   (on average, for every student who did not spend more than $400 on textbooks, there are 1.7 students who spend more than $400 on textbooks).