**The Titanic 1**

On April 15, 1912, the Titanic struck an iceberg and rapidly sank with only 710 of her 2,204 passengers and crew surviving. Data on survival of passengers are summarized in the table below. (Data source: <http://www.encyclopedia-titanica.org/titanic-statistics.html>)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Survived** | **Did not survive** | **Total** |
| **First class passengers** | 201 | 123 | 324 |
| **Second class passengers** | 118 | 166 | 284 |
| **Third class passengers** | 181 | 528 | 709 |
| **Total passengers** | 500 | 817 | 1317 |

1. Calculate the following probabilities. Round your answers to three decimal places.
   1. If one of the passengers is randomly selected, what is the probability that this passenger was in first class?
   2. If one of the passengers is randomly selected, what is the probability that this passenger survived?
   3. If one of the passengers is randomly selected, what is the probability that this passenger was in first class and survived?
   4. If one of the passengers is randomly selected from the first class passengers, what is the probability that this passenger survived? (That is, what is the probability that the passenger survived, given that this passenger was in first class?)
   5. If one of the passengers who survived is randomly selected, what is the probability that this passenger was in first class?
   6. If one of the passengers who survived is randomly selected, what is the probability that this passenger was in third class?
2. Why is the answer to part (a.iv) larger than the answer to part (a.iii)?
3. Why is the answer to part (a.v) larger than the answer to part (a.vi)?
4. What other questions can you ask and answer using information in the given table? List at least three.