Probability and Two-Way Tables

A QUESTION ABOUT BREAST CANCER

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Test Positive** | **Test Negative** | **Total** |
| **Have BC** |  |  |  |
| **Don’t have BC** |  |  |  |
| **Total** |  |  |  |

SUPERPOWERS

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Female** | **Male** | **Total** |
| **Super Strength** |  |  |  |
| **Fly** |  |  |  |
| **Telepathy** |  |  |  |
| **Freeze Time** |  |  |  |
| **Invisibility** |  |  |  |
| **Total** |  |  |  |

THE TITANIC

In 1912, the Titanic was struck by an iceberg and sank. Tragically, there were not enough lifeboats to accommodate all the passengers. The following table gives information about which adult passengers died and which survived.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Survived** | **Died** | **Total** |
| **First Class** | **197** | **122** | **319** |
| **Second Class** | **94** | **167** | **261** |
| **Third Class** | **151** | **476** | **627** |
| **Total** | **442** | **765** | **1207** |

1. What percent of all adult passengers survived?
2. What percent of all first class adult passengers survived?
3. Is being a first class adult passenger independent of survival? Explain.
4. Choose an adult passenger at random. What is the probability that this passenger survived?
5. Given that an adult third class passenger is chosen at random, what is the probability that this passenger survived?
6. Are the events being an adult third class passenger and surviving independent? Explain.