**Testing for the “Rare” Disease**

*Scenario*

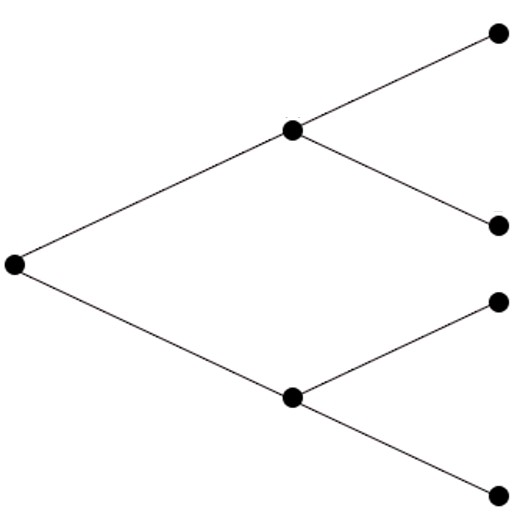
There is a test for this “rare” disease; however, it is only 98% accurate. Only 0.5% of the population has this “rare” disease. Imagine your doctor tells you that tested positive for this disease, how concerned should you be?

*Procedures*

Step 1: Create a tree diagram.

Event A is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The complement of Event A is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.



Event B is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The complement of Event B is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Find P(A∩B) or P(A and B). \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Find P(A’∩B’) or P(A’ and B’). \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Step 2: Create a chart using a town population of 10,000.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Positive**  **test result** | **Negative**  **test result** | **Total** |
| **Yes**  (has the disease) |  |  |  |
| **No**  (does not have  the disease) |  |  |  |
|  |  |  | 10,000 |

*Question*

Based on the data analysis, how concerned should you be about your test results? Justify your conclusion. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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