

Homework #7  
Due Monday, April 6  
No late papers accepted! No excuses!

1. A researcher wishes to test the effectiveness of a flu vaccination. 150 people are vaccinated, 180 people are vaccinated with a placebo, and 100 people are not vaccinated. The number in each group who later caught the flu was recorded. The results are shown below. **2 points each**

|                              | <u>Vaccinated</u> | <u>Placebo</u> | <u>Control</u> |
|------------------------------|-------------------|----------------|----------------|
| <u>Caught the flu</u>        | 8                 | 19             | 21             |
| <u>Did not catch the flu</u> | 142               | 161            | 79             |

If one person is randomly selected, find each of the following probabilities.

- Find the probability that the person selected was vaccinated.
- Find the probability that the person selected caught the flu.
- Find the probability that the person was vaccinated and caught the flu.
- Find the probability that the person selected was vaccinated or caught the flu.
- Find the probability that the person selected was vaccinated given that the person caught the flu.
- Find the probability that the person selected caught the flu given that the person selected was vaccinated.

Are the events “being vaccinated” and “catching the flu” mutually exclusive events? Why or why not?

If two people are randomly selected, find the probability that both caught the flu.