

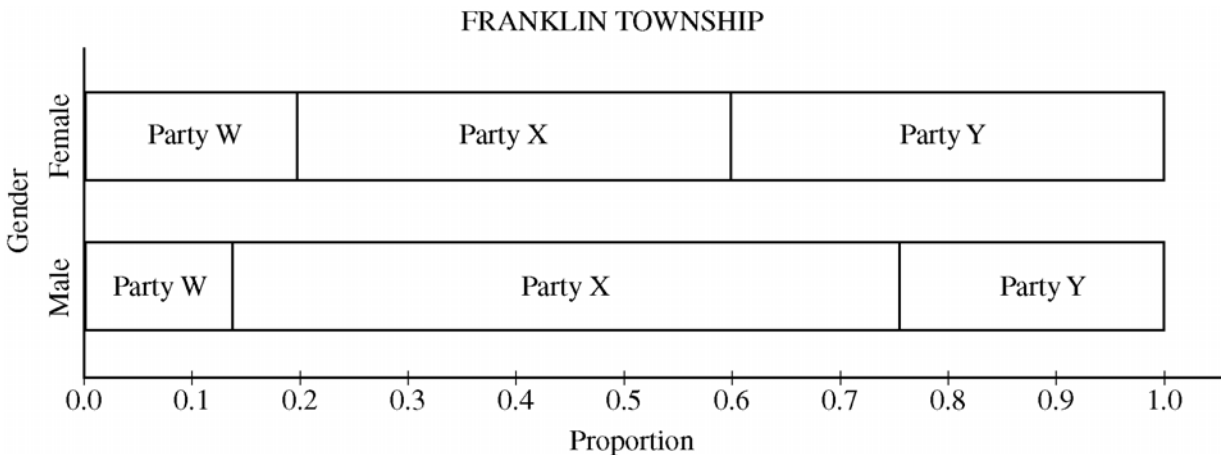
Directions: This final problem spans the next two pages. Show all your work. Indicate clearly the methods you use, because you will be scored on the correctness of your methods as well as on the accuracy and completeness of your results and explanations.

The table below shows the political party registration by gender of all 500 registered voters in Franklin Township.

| | Party W | Party X | Party Y | Total |
|--------|---------|---------|---------|-------|
| Female | 60 | 120 | 120 | 300 |
| Male | 28 | 124 | 48 | 200 |
| Total | 88 | 244 | 168 | 500 |

- a) Given that a randomly selected registered voter is a male, what is the probability that he is registered for Party Y?
- b) Among the registered voters of Franklin Township, are the events “is a male” and “is registered for Party Y” independent? Justify your answer based on probabilities calculated from the table above.

- c) One way to display the data in the table is to use a segmented bar graph. The following segmented bar graph, constructed from the data in the party registration–Franklin Township table, shows party-registration distributions for males and females in Franklin Township.



In Lawrence Township, the proportions of all registered voters for Parties W, X, and Y are the same as for Franklin Township, and party registration is independent of gender. Complete the graph below to show the distributions of party registration by gender in Lawrence Township.

