

1. In a class of students, the following data table summarizes how many students passed a test and complete the homework due the day of the test. What is the probability that a student completed the homework given that they passed the test?

|                               | Passed the test | Failed the test |
|-------------------------------|-----------------|-----------------|
| Completed the homework        | 14              | 2               |
| Did not complete the homework | 3               | 5               |

2. In a class of students, the following data table summarizes how many students passed a test and complete the homework due the day of the test. What is the probability that a student completed the homework given that they passed the test?

|                               | Passed the test | Failed the test |
|-------------------------------|-----------------|-----------------|
| Completed the homework        | 16              | 2               |
| Did not complete the homework | 4               | 5               |

3. In a class of students, the following data table summarizes how many students play an instrument or a sport. What is the probability that a student who plays a sport also plays an instrument?

|                       | Plays an instrument | Does not play an instrument |
|-----------------------|---------------------|-----------------------------|
| Plays a sport         | 3                   | 2                           |
| Does not play a sport | 7                   | 12                          |

4. In a class of students, the following data table summarizes how many students have a brother or a sister. What is the probability that a student has a sister given that they have a brother?

|                        | Has a brother | Does not have a brother |
|------------------------|---------------|-------------------------|
| Has a sister           | 3             | 2                       |
| Does not have a sister | 6             | 18                      |

5. In a class of students, the following data table summarizes how many students have a brother or a sister. What is the probability that a student has a brother given that they have a sister?

|                        | Has a brother | Does not have a brother |
|------------------------|---------------|-------------------------|
| Has a sister           | 2             | 6                       |
| Does not have a sister | 7             | 8                       |

6. The following table represents the highest educational attainment of all adult residents in a certain town. If a resident who has a master's degree is chosen at random, what is the probability that they are aged 50 or over? Round your answer *to the nearest thousandth*.

|                      | Age<br>20-29 | Age<br>30-39 | Age<br>40-49 | Age 50<br>& over | Total        |
|----------------------|--------------|--------------|--------------|------------------|--------------|
| High school<br>only  | 638          | 1008         | 577          | 1678             | 3901         |
| Some college         | 1187         | 850          | 971          | 1201             | 4209         |
| Bachelor's<br>degree | 498          | 940          | 1082         | 1048             | 3568         |
| Master's<br>degree   | 347          | 959          | 337          | 446              | 2089         |
| Total                | 2670         | 3757         | 2967         | 4373             | <b>13767</b> |

7. The following table represents the highest educational attainment of all adult residents in a certain town. If an adult is chosen randomly from the town, what is the probability that they have a high school degree or some college, but have no college degree? Round your answer *to the nearest thousandth*.

|                      | Age<br>20-29 | Age<br>30-39 | Age<br>40-49 | Age 50<br>& over | Total        |
|----------------------|--------------|--------------|--------------|------------------|--------------|
| High school<br>only  | 1673         | 1070         | 1165         | 1702             | 5610         |
| Some college         | 2142         | 1908         | 814          | 2722             | 7586         |
| Bachelor's<br>degree | 1395         | 644          | 551          | 1352             | 3942         |
| Master's<br>degree   | 488          | 433          | 199          | 1137             | 2257         |
| Total                | 5698         | 4055         | 2729         | 6913             | <b>19395</b> |

8. In a class of 28 students, 11 have a brother and 9 have a sister. There are 2 students who have a brother and a sister. What is the probability that a student has a sister given that they have a brother?

9. In a class of 25 students, 5 have a cat and 9 have a dog. There are 3 students who have a cat and a dog. What is the probability that a student has a cat given that they do *not* have a dog?

10. In a class of 30 students, 12 have a cat and 19 have a dog. There are 6 students who do not have a cat or a dog. What is the probability that a student chosen randomly from the class has a dog?



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