Accelerated Geometry Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Conditional Probability: Two Way Tables Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Conditional Probability can also be calculated from a two-way table. A two-way table is

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Examples

1. Use the table to answer the following questions.

|  |  |  |  |
| --- | --- | --- | --- |
| Age Group | Female | Male | Total |
| 15 to 17 | 89 | 61 |  |
| 18 to 24 | 5668 | 4697 |  |
| 25 to 34 | 1904 | 1589 |  |
| 35 or older | 1660 | 970 |  |
| Total |  |  |  |
| \* measured in thousands of persons | | | |

a) What percent of college students are aged 18-24?

b) What percent of college students are male?

c) What percent of 18-24 year olds are women?

d) What percent of women are aged 18-24?

2. The two-way table shows the gender of each 40 randomly selected US high school students and whether the student has allergies.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Female | Male | Total |
| Allergies | 10 | 8 |  |
| No Allergies | 13 | 9 |  |
| Total |  |  |  |

Randomly select a student from this sample and consider the events: A: The student has allergies and F: the student is female.

(a) Find *P* (A) (b) Find *P* (F)

(c) Find *P* (A and F) (d) Find *P* (A or F)

(e) Find *P* (A|F) (f) Find *P* (F|A)

(g) Are the events Allergies and Male independent?