**Two Way Relative Frequency Distribution Tables**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Joint relative frequencies are compound probabilities of using AND to combine one possible outcome of each categorical variable (P(A and B)).

Marginal relative frequencies are the probabilities for the outcomes of one of the two categorical variables in a two-way table, without considering the other variable.

Conditional relative frequencies are the probabilities of one particular outcome of a categorical variable occurring, given that one particular outcome of the other categorical variable has already occurred.

Youth Soccer League

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Age Group | | | | | |
| Gender | 3-5 years | 6-8 years | 9-11 years | 12-14 years | 15-17 years | Total |
| Male | 4 | 3 | 3 | 5 | 5 | 20 |
| Female | 1 | 4 | 3 | 4 | 3 | 15 |
| Total | 5 | 7 | 6 | 9 | 8 | 35 |

Create a relative frequency distribution table.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Age Group | | | | | |
| Gender | 3-5 years | 6-8 years | 9-11 years | 12-14 years | 15-17 years | Total |
| Male |  |  |  |  |  |  |
| Female |  |  |  |  |  |  |
| Total |  |  |  |  |  |  |

Create a relative frequency distribution table by row.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Age Group | | | | | |
| Gender | 3-5 years | 6-8 years | 9-11 years | 12-14 years | 15-17 years | Total |
| Male |  |  |  |  |  |  |
| Female |  |  |  |  |  |  |
| Total |  |  |  |  |  |  |

Create a relative frequency distribution table by column.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Age Group | | | | | |
| Gender | 3-5 years | 6-8 years | 9-11 years | 12-14 years | 15-17 years | Total |
| Male |  |  |  |  |  |  |
| Female |  |  |  |  |  |  |
| Total |  |  |  |  |  |  |

* What is the relative frequency of players who are male and 9-11 years old? (joint relative frequency)
* What is the percentage of female players that are 15-17 years old? (conditional relative frequency)
* What percentage of league members are male? (marginal relative frequency)

Independent Practice

Below is a frequency table that summarizes the results of a survey given to 50 high school students.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Favorite Sport | | | | |
| Favorite College Team | Basketball | Football | Soccer | Baseball | Total |
| Duke | 9 | 2 | 1 | 1 | 13 |
| Carolina | 7 | 5 | 6 | 2 | 20 |
| NCSU | 3 | 5 | 2 | 2 | 12 |
| Other | 1 | 3 | 1 | 0 | 5 |
| Total | 20 | 15 | 10 | 5 | 50 |

Create a relative frequency table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Favorite Sport | | | | |
| Favorite College Team | Basketball | Football | Soccer | Baseball | Total |
| Duke |  |  |  |  |  |
| Carolina |  |  |  |  |  |
| NCSU |  |  |  |  |  |
| Other |  |  |  |  |  |
| Total |  |  |  |  |  |

Create a relative frequency table by row.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Favorite Sport | | | | |
| Favorite College Team | Basketball | Football | Soccer | Baseball | Total |
| Duke |  |  |  |  |  |
| Carolina |  |  |  |  |  |
| NCSU |  |  |  |  |  |
| Other |  |  |  |  |  |
| Total |  |  |  |  |  |

Create a relative frequency table by column.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Favorite Sport | | | | |
| Favorite College Team | Basketball | Football | Soccer | Baseball | Total |
| Duke |  |  |  |  |  |
| Carolina |  |  |  |  |  |
| NCSU |  |  |  |  |  |
| Other |  |  |  |  |  |
| Total |  |  |  |  |  |

* What is the relative frequency of students who prefer NCSU and baseball?
* What percentage of Carolina fans prefers soccer?
* What percentage of students prefers football?