AP Stats Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Probability and Venn Diagrams

1. You survey your friends about the type of party they prefer. The results are summarized in the table

|  |  |  |  |
| --- | --- | --- | --- |
|  | Male  | Female  | Total  |
| Bowling  | 6  | 2  | 8  |
| Skating  | 3  | 11  | 14  |
| Dancing  | 1  | 3  | 4  |
| Total  | 10  | 16  | 26  |

1. What is the probability that a male likes bowling?
2. What is the probability that skating was chosen by a female?
3. What is the probability the friend was male or liked dancing?
4. Eighth grade students were asked whether they participate in an after-school activity. a) Complete the two-way frequency table below.

 After-school Activity

|  |  |  |  |
| --- | --- | --- | --- |
|  | Yes  | No  | Total  |
| Male  |   | 40  |   |
| Female  |   |   | 95  |
| Total  | 102  |   | 187  |

Gender

b) What is the probability a female participates in an after-school activity?

1. What is the probability a student is male or does not participate?
2. Of 400 college students, 120 are enrolled in math, 220 are enrolled in English, and 55 are enrolled in both. Draw the Venn diagram for this scenario.

If a student is selected at random, find the probability that

* + 1. the student is enrolled in mathematics.
		2. the student is enrolled in mathematics or English.

* + 1. the student is enrolled in either mathematics or English, but not both.

1. In a group of 35 children, 10 have blonde hair, 14 have brown eyes, and 4 have both blonde hair and brown eyes. Draw the Venn diagram for this scenario.

If a child is selected at random, find the probability that the child has blonde hair or brown eyes.

1. Students were asked what type of music they liked

18

8

11

7

1

24

17

Rap

Rock

Country

1. How many total people are represented in the diagram? \_\_\_\_
2. How many people like country? \_\_\_\_\_
3. If one person is chosen at random, what is the probability that that person will like rap music?
4. If one person is chosen at random, what is the probability that that person will like country or rock music?
5. If one person is chosen at random, what is the probability that that person will like country and rock music?
6. **Use the following information to fill in the Venn Diagram below.**

100 people were asked if they liked Math, Science, or Social Studies. Everyone answered that they liked at least one.

56 like Math 18 like Math and Science

43 like Science 10 like Science and Social Studies

35 like Social Studies 12 like Math and Social Studies

6 like all three subjects

Science

Math

Social Studies

1. How many people like Math only? \_\_\_\_\_
2. How many people like Science only? \_\_\_\_\_
3. If one person is chosen at random, what is the probability that that person will like
	1. Science and Math? .
4. If one person is chosen at random, what is the probability that that person will like only
	1. Math? .
5. If one person is chosen at random, what is the probability that that person will not like
	1. Science? .
6. If one person is chosen at random, what is the probability that that person will like
	1. Science or Math? .
7. If one person is chosen at random, what is the probability that that person will like
	1. Science but not math? .