

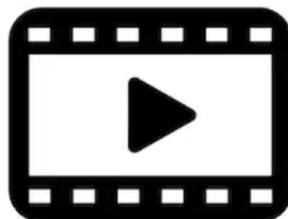
Outcome: Apply principles of probability to calculate or verify the chances of an event. [CONCLUDE]

TASK: In a class of 50 students; 30 take Philosophy, 23 take Sociology, and 12 take both. Create a two-way frequency table and use it to answer what is the probability that a randomly selected student...

	Take Sociology	Does Not Take Sociology	Total
Take Philosophy			
Does Not Take Philosophy			
Total			

- (a) ... takes Sociology?
- (b) ... takes both Philosophy and Sociology?
- (c) ... does not take Philosophy?
- (d) ... takes Sociology but not Philosophy?
- (e) ... takes Philosophy given they already take Sociology?
- (f) ... takes Philosophy or Sociology?
- (g) ... takes neither Philosophy nor Sociology?
- (h) ... takes Sociology or Philosophy but not both?

When you are finished, you may check your answers posted on our website and then watch this video (click the icon below). He answers the same questions, but uses a Venn Diagram instead of a two-way table. Take notes as he does and take your time, feel free to pause and rewind the video.



PRACTICE: Now that you have reviewed how to use a Venn Diagram to answer probability questions, let's practice a little more with it.

1. Use the Venn Diagram to answer the following questions.

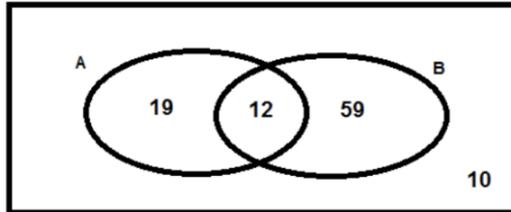
(a) Sample Space = _____

(b) $P(A) =$ _____

(c) $P(B) =$ _____

(d) $P(A \cup B) =$ _____

(e) $P(A \cap B) =$ _____



2. Complete the Venn Diagram below and use it to answer the following questions.

*When you arrive home today, you find 27 cupcakes in a large circular plate.
There are 13 that have icing, 11 have sprinkles, and 4 have both.*

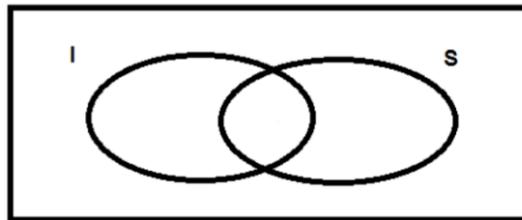
(a) Sample Space = _____

(b) $P(I) =$ _____

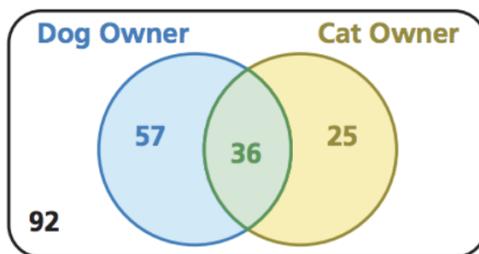
(c) $P(S) =$ _____

(d) $P(I \cup S) =$ _____

(e) $P(I \cap S) =$ _____



3. Use the venn diagram below to answer the questions below. It is optional if you would like to construct a two-way table also.



(a) What is the probability that a randomly selected person does not own either pet?

(b) What is the probability that a randomly selected person who owns a dog also owns a cat?

4. Construct a venn diagram of the sets described below.

(a) Of the positive integers less than 15, set A consists of the factors of 15 and set B consists of all odd numbers.

(b) Of the positive integers less than 14, set A consists of all prime numbers and set B consists of all even numbers.

SUMMARY: When finished with this lesson, complete the google doc shared to you in google classroom. This will be graded for CONCLUDE. If anything is confusing, visit Katherine during office hours at 11 am before completing the google doc.