Venn diagrams	Season	2
	Episode	05
	Time frame	1 period

Prerequisites :

Objectives :
- See examples of Venn diagrams.
- Review the main set operations.

Materials :
- *Lesson about Venn diagrams.*
- *Matching cards with definitions and Venn diagrams.*

1 – Matching game with sets definitions and diagrams 10 mins

Eighteen definitions and eighteen Venn diagrams are handed out to the students. They mingle to find the right diagram for their definition and vice-versa..

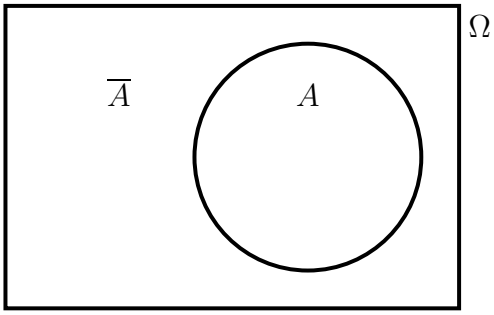
2 – Oral presentations 45 mins

After a few lesson slides, each pair of students goes to the board to explain the diagram and the definition. All diagrams are included in the beamer.

Venn diagrams are graphical representations of relations between two, three or more sets. Each set is represented by a simple geometrical shape, such as a circle, an ellipse or a rectangle.

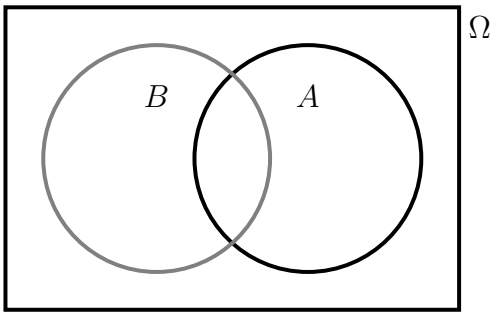
One set inside a universe

In this first example, we see the universe Ω (the inside of the rectangle) and one *subset* of Ω, A (the inside of the circle). The *complement* of A in Ω, $\overline{A}$, is the part of the rectangle that is not inside the circle.



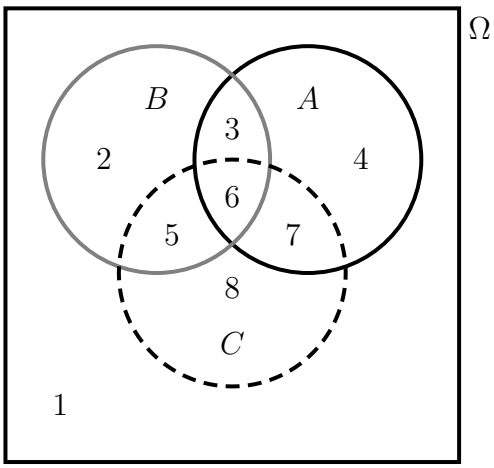
Two sets inside a universe

In this second example, we see the universe Ω and two subsets of Ω, A (black, on the right) and B (grey, on the left). The *intersection* $A \cap B$ of the two sets is their common part. The *union* $A \cup B$ of the two sets is the inside of the two circles, including the intersection.

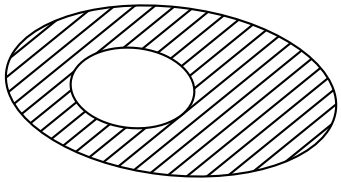
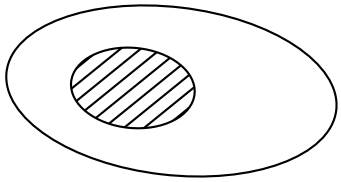
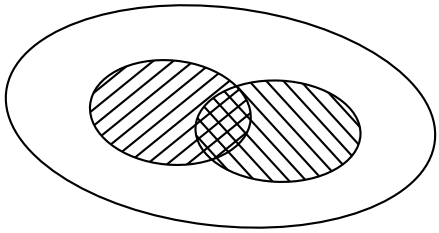
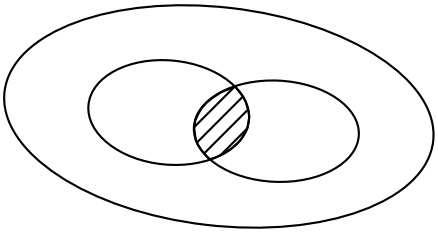
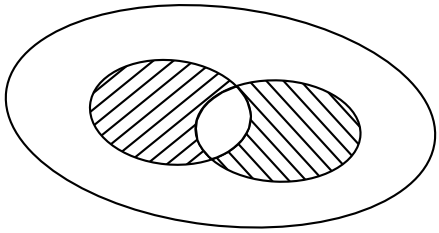
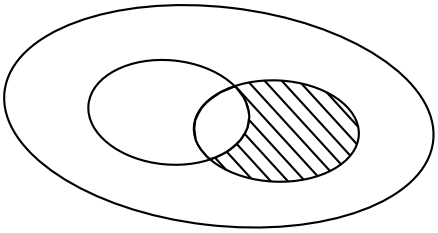


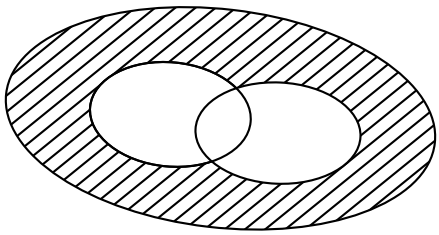
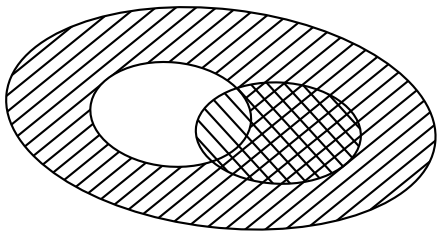
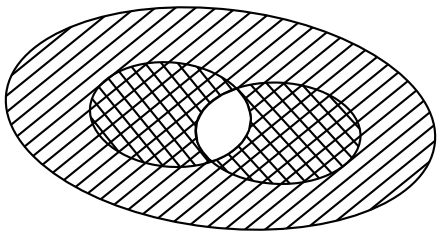
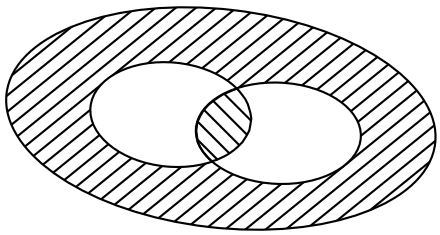
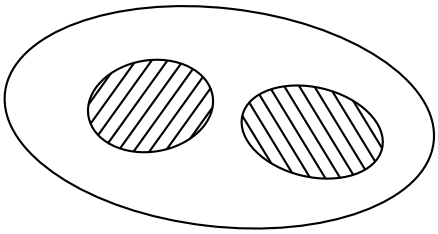
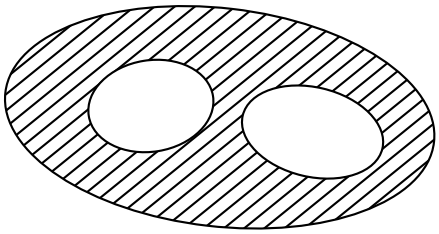
Three sets inside a universe

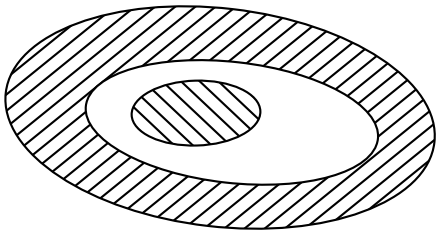
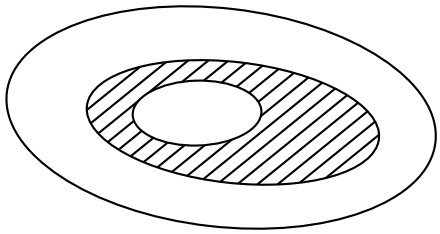
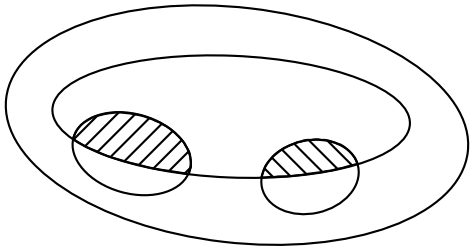
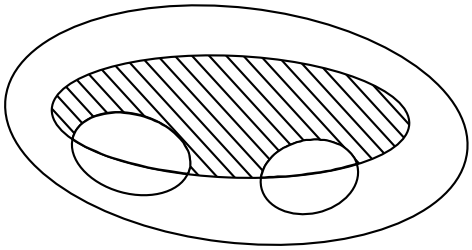
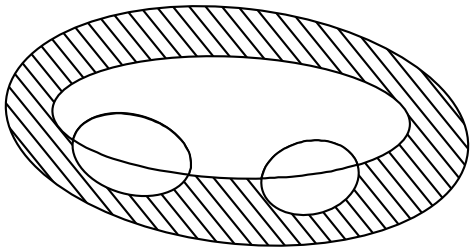
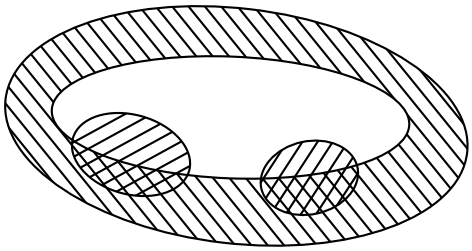
In this third example, we see the universe Ω and three subsets of Ω, A (black, on the upper right), B (grey, on the upper left) and C (dashed, below A and B). Every possible intersection or union of two or three of these sets and their complement is represented on this diagram. For example, region 3 is $(A \cap B) \cap \overline{C}$, while $(\overline{A} \cup B) \cap C$ is made of regions 5 and 6.



Venn diagrams	Season	2
	Episode	05
	Document	Solutions

Real numbers that are not decimal.	Real numbers that are decimal.
	
Parallelograms with their diagonals equal or perpendicular.	Parallelograms with their diagonals equal and perpendicular.
	
Integers multiples of 7 and of 2 but not of 14.	Integers multiples of 7 that are not even.
	

Natural numbers that are neither multiple of 2 nor multiples of 3.	Parallelograms with their diagonals not equal or perpendicular.
	
Parallelograms with their diagonals equal or perpendicular or neither but not both.	Parallelograms with their diagonals equal and perpendicular or neither.
	
In the set of real numbers, natural numbers and irrational numbers.	Real numbers that are neither irrational nor natural.
	

Irrational and decimal real numbers.	Isosceles triangles that are not equilateral.
	
Trigonometric and linear functions such that $f(0) = 0$.	Functions such that $f(0) = 0$ that are neither linear nor trigonometric.
	
Functions such that $f(0) \neq 0$ that are neither linear nor trigonometric.	All linear and trigonometric functions and other functions such that $f(0) \neq 0$.
	

Document 1 Matching cards : definitions and Venn Diagrams

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Parallelograms with their diagonals equal and perpendicular or neither.
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Irrational and decimal real numbers.
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Trigonometric and linear functions such that $f(0) = 0$.
Functions such that $f(0) = 0$ that are neither linear nor trigonometric.
Functions such that $f(0) \neq 0$ that are neither linear nor trigonometric.
All linear and trigonometric functions and other functions such that $f(0) \neq 0$.