Sets

In this presentation we will practice drawing diagrams for three sets.

Example 1

Mark on the diagram the set corresponding to $(A \cap B') \cup C$.

Let's make some observations:

- $(A \cap B')$ is everything in A and not in B.
- C is of course everything in C.
- Finally we have $\cup$ between these, so we want elements that are in at least one of the two sets.

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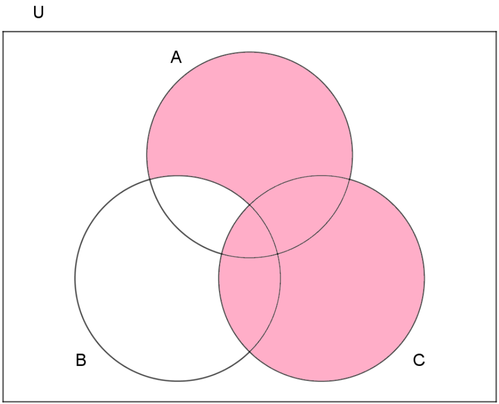

Example 2

Mark on the diagram the set corresponding to $(A \cup B)' \cap C'$.

Let's make some observations:

- $(A \cup B)'$ is everything outside of A and B. Using symbolic logic we could read this as: *it is not true that it is in A or in B.*
- C' is everything outside of C. In logic this is *not in C.*
- Finally we have $\cap$ between these, so we want elements that are in both sets. Using symbolic logic we have *it is not true that it is in A or in B* and *it is not in C.*

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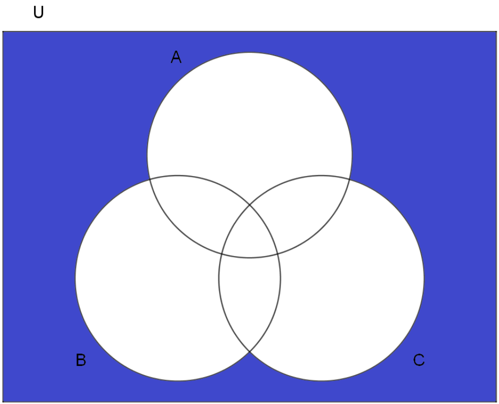

Example 3

Mark on the diagram the set corresponding to $(A \cap B) \cup C'$.

Observations:

- $(A \cap B)$ is everything that is both in A and in B.
- C' is again everything outside of C.
- Finally we have $\cup$ between these, so we want elements that are in at least one of the two sets. Using logic we have *it is both in A and B* **or** *it is not in C*.

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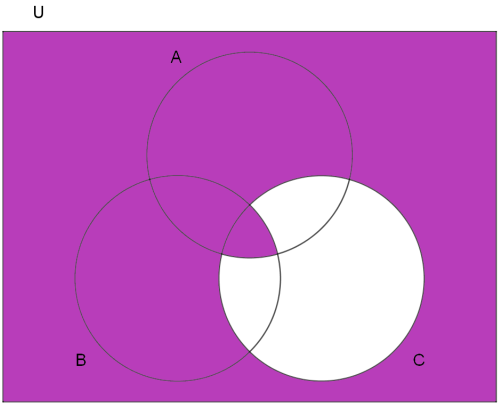

Example 4

Mark on the diagram the set corresponding to $(A \cup B) \cap (C \cap A)$.

Let's make some observations:

- $(A \cup B)$ is everything in A or in B.
- $(C \cap A)$ is everything in C and in A.
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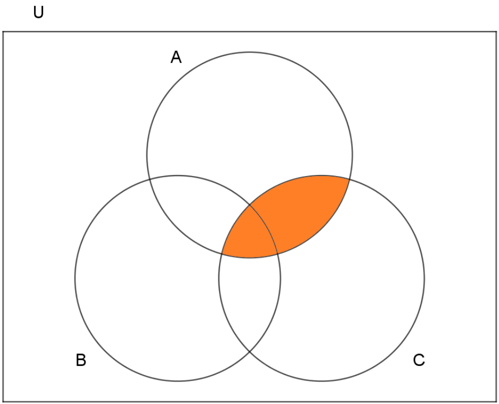

Example 5

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Let's make some observations:

- $(A' \cap B')$ is everything that is both outside of A and outside of B.
- $(B \cup C)$ is everything in B or in C.
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