Venn diagrams with 3 sets
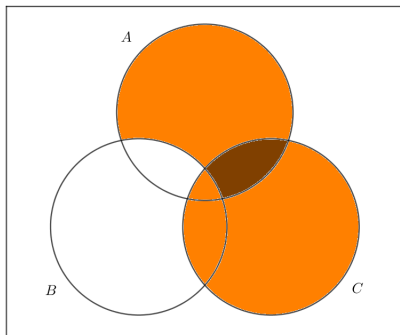
Example 1

Represent the set $(A \cap B') \cup C$ on a Venn diagram.

Example 1

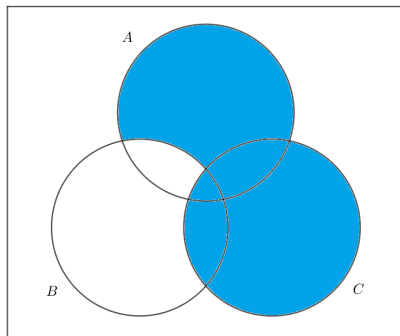Represent the set $(A \cap B') \cup C$ on a Venn diagram.
We can start by shading $A \cap B'$ and C. We get the following diagram:

The darker colour means that this region has been shaded twice.

Example 1

Now we want the union ∪ of these two sets, this means that we take everything that has been shaded at least once, so the answer will be:
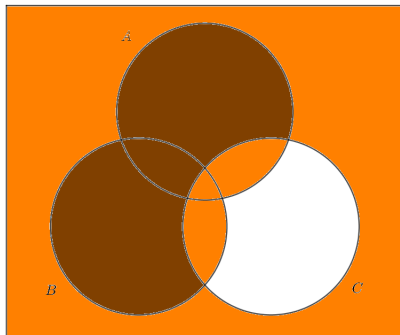
Example 2

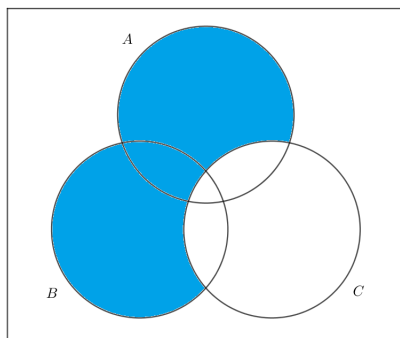Represent the set $(A \cup B) \cap C'$ on a Venn diagram.

Example 2

Represent the set $(A \cup B) \cap C'$ on a Venn diagram.

We can start by shading $A \cup B$ and C'. We get the following diagram:

Example 2

Now we want the intersection ∩ of these two sets, so we take everything that has been shaded twice, so the answer will be:
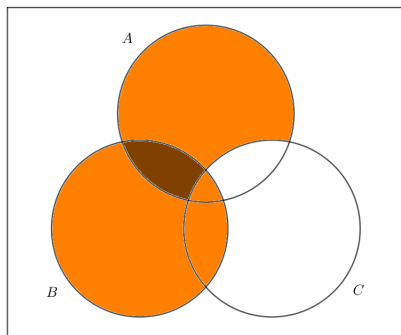
Example 3

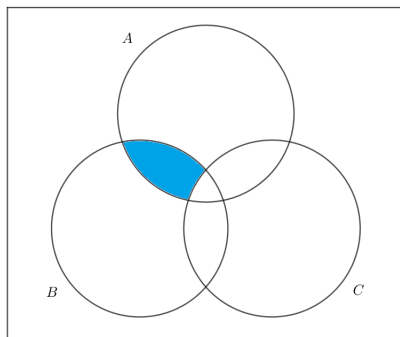Represent the set $B \cap (A \cap C')$ on a Venn diagram.

Example 3

Represent the set $B \cap (A \cap C')$ on a Venn diagram.

We can start by shading B and $A \cap C'$. We get the following diagram:

Example 3

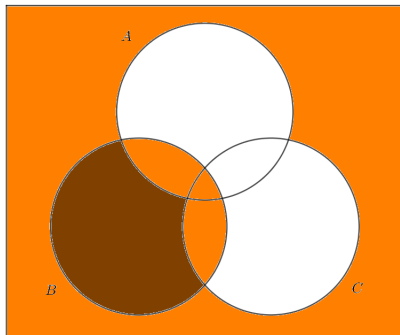Now we want the intersection ∩ of these two sets, so the answer will be:

Example 4

Represent the set $B \cup (A' \cap C')$ on a Venn diagram.

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Represent the set $B \cup (A' \cap C')$ on a Venn diagram.

We can start by shading B and $A' \cap C'$. We get the following diagram:

Example 4

Now we want the union ∪ of these two sets, so the answer will be: