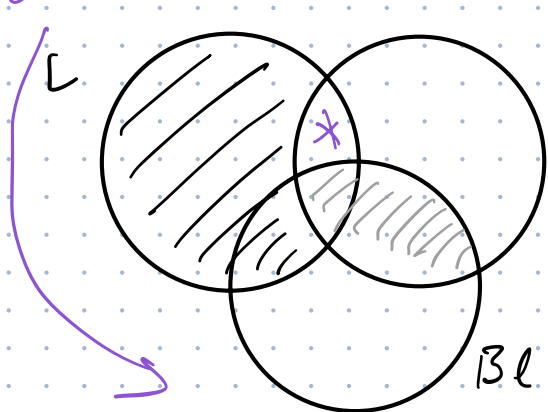


# Exercises in class

All the leaves are brown

No brown things are blue  $\Leftrightarrow$  Brown things are NOT blue

Some leaves are not blue

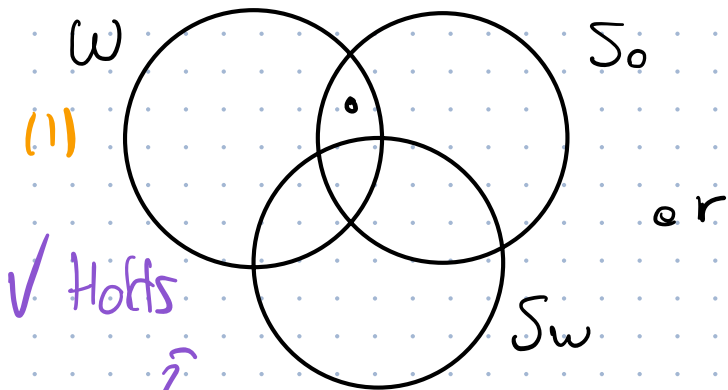


there should be a dot at  $x$ , but there isn't  $\Rightarrow$  invalid conclusion

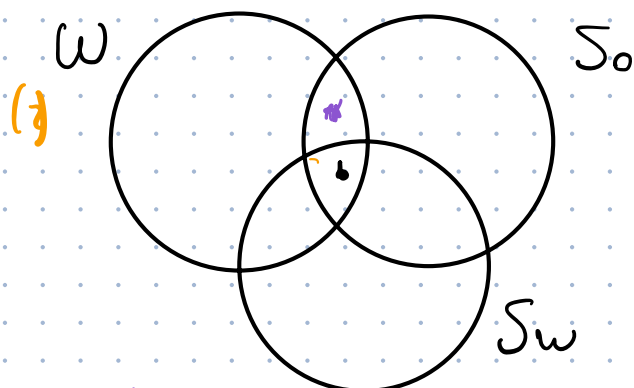
implies that there are individual leaves

Some wines are sour (2 cases) 2 cases

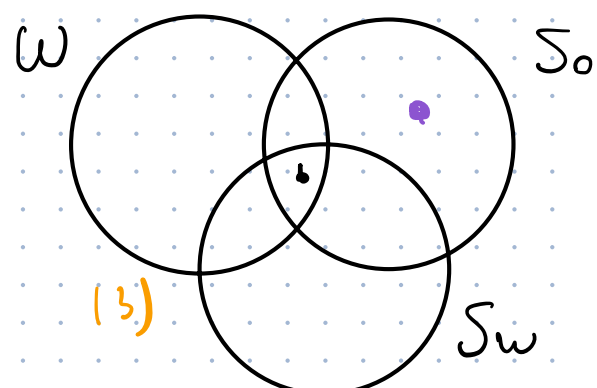
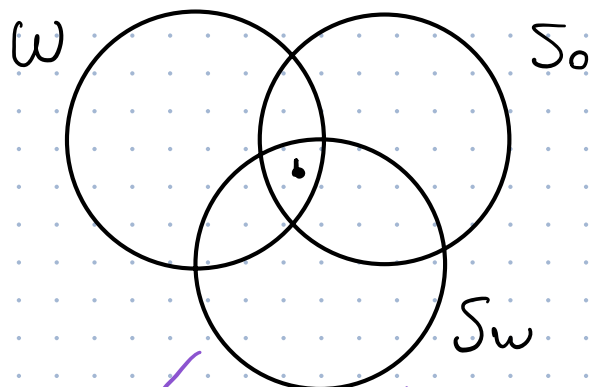
Not all sour things are sweet  $\Leftrightarrow$  Some sour things are not sweet



satisfies second sentence

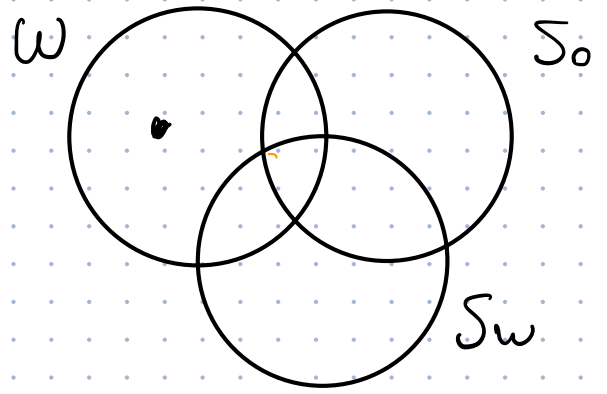
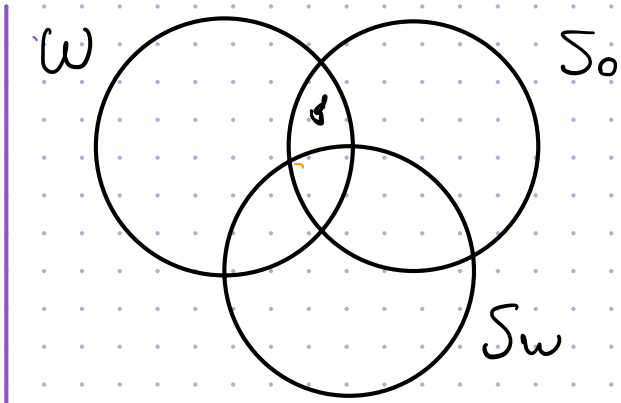


✓ Holds



✗ Does not hold

## ↳ Conclusion



\* Counterexample

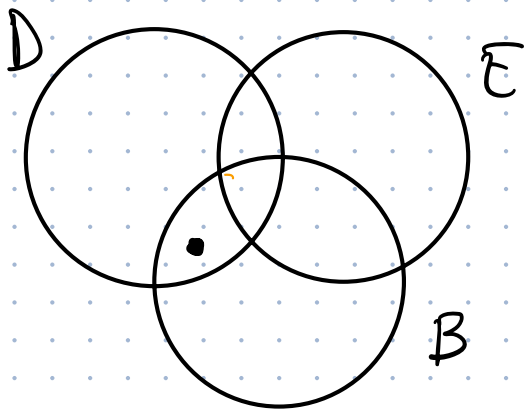
Invalid conclus.

Take a sweet sour wine + something NOT sweet

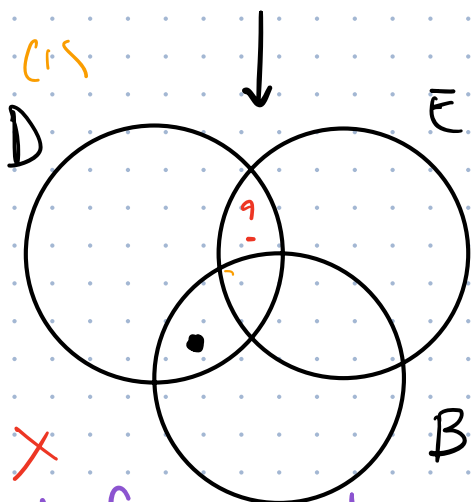
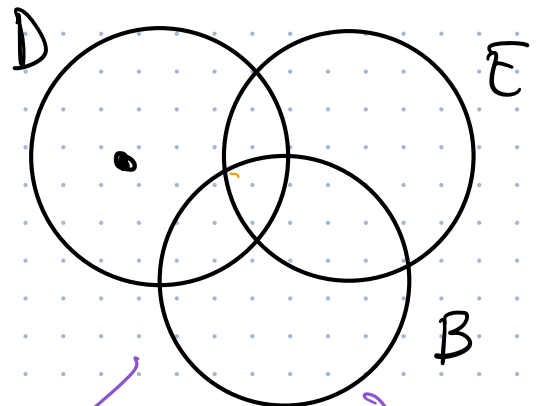
Not all demons are easy  $\leftrightarrow$   $\exists$  demon which is not easy

(1) Some demons are blue

Some demons are easy

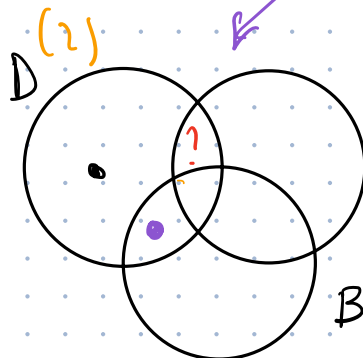


or



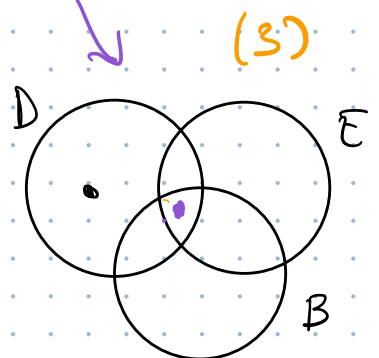
Satisfies 2nd sentence

or



X

or



✓

Invalid conclusion

