

TA: Daniel Greco

1 Administrative Stuff

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Office Hours: Th 2-3 *or by appointment* (if the scheduled time doesn't work, just send me an email and I'll be happy to arrange an alternative time).

2 Arguments: Definitions

As well use the term, an argument is not a dispute or disagreement, but instead a series of statements or claims intended to provide support for the truth of another statement or claim. The conclusion is the statement or claim that the argument is supposed to establish. The premises are the statements or claims that are supposed to provide the support.

An argument is valid if and only if it is impossible that all the premises are true but the conclusion is false. It is sound if and only if it valid, *and* all the premises are true.

If an argument is invalid, it is possible to produce a counterexample—we can come up with a scenario in which the premises are true, but the conclusion is false.

3 Arguments: Examples

Are the following arguments valid? If not, try to come up with counterexamples. If you think the definitions given so far don't settle the question, explain why.

Argument 1:

Premise 1: Shaquille O'Neal is famous.

Premise 2: Shaquille O'Neal is a basketball player.

Conclusion: Shaquille O'Neal is a famous basketball player.

Argument 2

Premise 1: All whales are reptiles.

Premise 2: All reptiles have hair.

Conclusion: All whales have hair.

Argument 3

Premise 1: Some dogs are fuzzy.

Conclusion: $2 + 2 = 4$.

Argument 4

Premise 1: Jesse has a higher GPA in math than Quinn.

Premise 2: Jesse has a higher GPA in English than Quinn.

Premise 3: The only classes that Jesse and Quinn have taken are in math and English.

Conclusion: Jesse has a higher overall GPA than Quinn.

Try to come up with an example of:

1. An invalid argument with true premises and a true conclusion.
2. A valid but unsound argument with a true conclusion.
3. A valid argument with a false conclusion.
4. A sound argument with a false conclusion.

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