

## SWBAT recognize propositions, Negations, and Double Negations

A proposition... *Makes a claim. Must be a complete sentence. Must be true or false*

Which are propositions and which are not?

1. Joan is sitting in the chair - *yes*
2. I did not take the pen - *yes*
3. Are you going to the store? - *no, its a question. Doesn't make a claim*
4. Three miles south of here - *no, not a full sentence*
5.  $7+9=2$  - *yes, but its a false proposition*

A negation... *changes the truth value of a proposition*

Negate each of the statements from above that are propositions.

1. *Joan is not sitting in the chair*
2. *I did take the pen*
3. *not a proposition*
4. *not a proposition*
5.  *$7+9 \neq 2$*

A **double negation**.... Is more than one negation in a sentence. Any two negations will cancel each other out.

Change a negative word to a positive word: against to for, oppose to support, etc.

Example of double negation...what do they really say?

6. I cannot say that I do not disagree with you.  
Actual meaning...I agree with you.
7. My opinion is that it's unlikely that there is no association.  
Actual meaning...Its likely there is an association.
8. Legal principals weigh heavily against overruling the decision.  
Actual meaning...Legal principals weigh heavily for supporting the decision

What are opposite meanings?

Overrule  against  override  ban  violate

Determine whether each statement is a proposition and give your reason.

- |  |              |           |
|--|--------------|-----------|
| 9. <i>All dogs are good companions.</i>            | Proposition? | YES or NO |
| Reason:  |              |           |
| 10. <i>Just do it!</i>                             | Proposition? | YES or NO |
| Reason:  |              |           |
| 11. <i>Have you been to the dentist this year?</i> | Proposition? | YES or NO |
| Reason:  |              |           |
| 12. <i>Not all carpenters are men.</i>             | Proposition? | YES or NO |
| Reason:  |              |           |
| 13. <i>To be or not to be.</i>                     | Proposition? | YES or NO |
| Reason:  |              |           |
| 14. <i>Shakespeare was a French man.</i>           | Proposition? | YES or NO |
| Reason:  |              |           |

Write the negation of each proposition.

Then state the truth value of the original proposition **and** of its negation.

15. Original: Paris is the capital of Maine (False)

Negation: Paris is NOT the capital of Maine (True)

16. Original: There have been two US presidents named Bush.

Negation:

17. Original: The Amazon River is in North America.

Negation:

18. Original: Most years do not have 365 days.

Negation:

Each statement contains a double or multiple negation. Explain the meaning of the statement and answer the question that follows.

19. The city council did not approve the no-confidence vote for the police chief.

Did the council support the police chief?

20. The Senator opposes the ban on anti-war demonstration.

Does the Senator approve of the demonstrations?

21. Congress voted against overriding the veto of the tax increase bill.

Did Congress approve the tax increase?

22. The overturning of the anti-discrimination policy violates the Constitution.

Does the Constitution allow the policy?

23. The Senate voted to override the President's veto on the disaster relief bill.

Did the Senate support the bill?

24. The ban on new treaties was not lifted.

Are new treaties allowed?