

Handout 1: If Math Could Speak - Answers

1. Is the statement, “ $1 + 1 = 2$ and all tables are wooden,” true or false?
False
2. Is the statement, “All birds can fly or no birds can fly,” true or false?
False
3. What is the inverse of the converse of
not $p \rightarrow q$?
not $q \rightarrow p$
4. What is the converse of, “All egg salads have mayonnaise”? Is it true?
The converse is, “If it has mayonnaise, it’s egg salad,” and it’s false. A sandwich with mayonnaise or a potato salad would be counterexamples.
5. What is the inverse of, “A duck’s quack doesn’t have an echo”?
If it isn’t a duck’s quack, it echoes.
6. Let’s say the contrapositive of a statement is, “If he isn’t using a knife and fork, then George isn’t eating his Snickers bar.” What is the original statement, in If-Then form?
If George is eating a Snickers bar, then he’s using a knife and fork.
7. What can be inferred from the statements, “*Jeopardy* is the best TV game show,” and, “*Wheel of Fortune* airs before *Jeopardy*”?
Wheel of Fortune airs before the best TV game show.
8. What can be inferred from the statements, “A Reese’s is a delicious morsel of chocolate-covered peanut butter,” and, “There’s no wrong way to eat a Reese’s”?
There’s no wrong way to eat a delicious morsel of chocolate-covered peanut butter.
9. What can be inferred from the statements, “All ducks have feathers,” and, “The Geico mascot does not have feathers”?
Nothing.
10. What can be inferred from the inverse of the statements, “All ducks have feathers,” and, “The Aflac mascot is a duck”?
If it’s not the Aflac mascot, it doesn’t have feathers.