

Truth Tables for Arguments

- (1) Determine whether the following are examples of affirming the antecedent, affirming the consequent, denying the antecedent, or denying the consequent. Use this to determine if each is valid. Do you consider the argument to be sound or unsound?
 - (a) If I take attendance, then you must come to class. You must come to class. Therefore, I take attendance.
 - (b) If penguins are birds, then penguins can fly. Penguins can not fly. Therefore, penguins are not birds.
 - (c) If I dance the hokey-pokey, I will know what it's all about. I do not dance the hokey-pokey. Thus, I do not know what it's all about.
 - (d) If cows are funny, then I laugh whenever I go to a dairy farm. Cows are funny. Therefore, I laugh whenever I go to a dairy farm.
- (2) Construct a truth table for each of the following and use it to determine whether the argument is valid. Do you consider the argument to be sound or unsound?
(Hint: When constructing truth tables, find the values for the portion of a premise in parentheses first. Look back at what we did in 1B for more on how to do this.)
 - (a) If high school graduates can't read at an adult level, then they will be unable to compete in the modern world. If high school graduates can't do math at an adult level, then they will be unable to compete in the modern world. Therefore, if high school graduates can't read at an adult level, then they can't do math at an adult level.
 - (b) Venezuela has a large foreign debt. If Venezuela has a large foreign debt, then Venezuela is a risky place to do business. Thus, Venezuela is a risky place to do business.
 - (c) If I watch baseball, then I will be bored to tears. I am watching baseball and I am not bored to tears. Therefore, I think the Rockies will go all the way this year.
 - (d) *Premises:* (p or q). (q or r).
Conclusion: (p or r).
 - (e) *Premise:* If (p and q), then p.
Conclusion: q.
 - (f) *Premise:* (not p) and (not q).
Conclusion: If p, then q.
 - (g) *Premises:* (If p, then q). (If (p and q), then r).
Conclusion: r.
 - (h) *Premises:* (If p, then q). (If q, then r). (not r).
Conclusion: not p.