

# (N) You Can't Handle the Truth (1/2) [Solution]

The 18 total distinct statements come from:

- 2 each from the original three statements (without and with substitution) = 6
- 4 each from the three new identity statements ( $X = Y$ ,  $X = X$ ,  $Y = Y$ , and  $Y = X$ ) = 12

**N1.** For example:

Given a statement " $X =/is/was Y$ " in  $TL$ ,

- replace  $X$  with  $Y$  in any statement before uttering; or
- replace  $Y$  with  $X$  in any statement before uttering; or
- both of these.

**N2.** It depends on the new statement's "form" and how it relates to the old ones. The most basic cases are:

- 1, if new is a non-ID that does not coordinate with any ID
- 2, if new is a non-ID that coordinates with one ID
- 4, if new is ID that does not coordinate
- 5, if new is ID that coordinates with one non-ID

[“ID” means a statement of the form, " $X =/is/was Y$ "; non-ID is anything else; “coordinating” means sharing a string]

**N3.** There is only one correct answer for each:

- a. Ruth has 2 + 2 siblings.
- b. Ruth knows Ottawa.
- c. Ruth prefers the Washington Capitals to the the capital city of Canada Senators.  
[note the repeated “the”]
- d. Ruth named her stuffed, toy bear after the 26th president of the U.S.
- e. Ruth named her stuffed, toy bear the 26th president of the U.S.



# (N) You Can't Handle the Truth (2/2) [Solution]

**N4.** Answer and explanation were graded together as a pair. Some acceptable answer/explanation pairs for each are:

- a. *True* —  $2 + 2$  evaluates to 4  
[Note that “*Weird—it’s unnatural to talk in arithmetic*” is not acceptable here. We know that Alfred judges such statements as “The U.K. contains  $2 + 2$  countries” as *True*. We are also told that Alfred and Ruth agree on all judgments.]
- b. *False* — Ruth may not “know,” *i.e.* be familiar with, Ottawa, so we do not know enough about Ruth and should select *False*.  
*Weird* — the change in sense of “knows” (from “can identify” to “is familiar with”) likely confuses Alfred and Ruth and prevents them from interpreting the statement easily.  
*True* — Ruth has heard of Ottawa, since she has feelings about the Ottawa Senators, and this is enough to conclude that she “is familiar with” Ottawa
- c. *Weird* — repeated “the” is ungrammatical  
*Weird* — “the the capital city of Canada Senators” is not a real entity, so the statement cannot be interpreted.  
*False* — “the the capital city of Canada Senators” is not a real entity, so Ruth has no feelings about it. We do not know whether Ruth feels net positively or negatively about the Capitals, so we do not know enough about Ruth and should select *False*.  
*True* — “the the capital city of Canada Senators” is not a real entity, so Ruth automatically prefers the (existing) Capitals.
- d. *True* — Ruth did indeed name the bear after this man. Whether or not she knew he was the 26th president of the U.S. does not affect the truth of the statement.
- e. *False* — Ruth’s bear is not named “the 26th President of the U.S.”  
*False* — Ruth did not “name” her bear (*i.e.* “designate him to serve as”) the 26th President of the the U.S. (we can safely assume, or we don’t know enough to say for sure.)

**N5.** Some ideas:

- recognize compound names like “Ottawa Senators” and avoid internal replacements
  - maybe use a list of these, or search for n-grams in a corpus
- avoid replacements after (mental/indirect speech) words like “knows,” “believes,” “hopes,” etc.
  - store a list of these words in memory
- distinguish “use” from “mention” (*e.g.* in sentence (e), “Theodore Roosevelt” is mentioned)
  - use context (other nearby words) to see, *e.g.* whether a human’s name is used to talk about a human (probably “use”) or a stuffed toy (probably “mention”)
- distinguish “is” (and “was”) of identity (“TR was the 26th President”) from “is” (and “was”) of predication (“TR was a president”)

