

Math 2283 - Introduction to Logic

Quiz #13 - 2016.02.15 Solutions

1. Convert the following quantified statement into symbolic logic form.
(You may define $P(x, y) : x \cdot y = 0$).

There is exactly one number x such that for any y , $x \cdot y = 0$.

$$\exists x \forall y, z [P(x, y) \wedge (P(z, y) \rightarrow (x = z))]$$

2. What is the difference between a sentential function and a designatory function?

When replacing variables by constants in a sentential function, the result is a sentence. When replacing variables by constants in a designatory function, the result is another constant.

3. State the Rule of Detachment.

Given a conditional sentence is true, as is its hypothesis, then the conclusion by itself is also true.