

Quiz Bonus Question

Let $X = \emptyset$, $Y = \{\emptyset\}$, $Z = \{\{\emptyset\}\}$

True or False:

1. $\emptyset \in X$

4. $X \subseteq Y$

7. $X \in Y$

2. $\emptyset \in Y$

5. $Y \subseteq Z$

8. $Y \in Z$

3. $\emptyset \in Z$

6. $X \subseteq Z$

1. F

4. T

7. T

2. T

5. T

8. T

3. F

6. F

Worksheet!

- Each proof proves $P \rightarrow Q$. For some P and some Q . What is P and Q for each?

1. Contrapositive
2. Incorrect. Proof of converse!
3. Contradiction
4. Proof by cases

* N.B. 2 is not a valid proof. Proves $Q \rightarrow P$ instead of $P \rightarrow Q$

Discussion

- Many ways to prove the same statement is true. Proof writing is art & science.

- "Suppose" "Assume" signals premise.

- Periods at end of equations

- Each new symbol is explained "for some integer"

- "Then", "Therefore", "Thus" signals deduction

- "That is", "Namely", signals a definition or explanation

- * LOOK for these in other proofs

- * use in your own proofs.