

1. What do each of the following notations mean?

 \in \subset \subseteq \ni \exists $\exists!$ \nrightarrow \therefore \implies \forall \equiv

s.t

iff

BWOC

BYSC

2. Write the following mathematical statements as complete sentences.

(a). $A = \{x \in \mathbb{Z} \mid x \geq 5\}$

(b). $\lim_{n \rightarrow \infty} s_n = 12$

Consider s_n to be a sequence.

(c). $A \Rightarrow B$

3. Explain why the following expressions are nonsense.

(a). Let x be an \mathbb{Z} .

(b). $\{x \mid x \in A \cap x \in B\}$

(c). $13 \subset \{x \mid x \text{ is a natural number}\}$

4. Using the list below,

- (a). Which ones, if any, are proved?
- (b). Which ones, if any, are used to prove?
- (c). Which ones, if any, are neither proven nor used to prove?

DEFINITION:

AXIOM:

THEOREM:

COROLLARY:

LEMMA:

PROPOSITION:

CONJECTURE:

5. Given the statement *If I go to Redfish Lake, then I waterski.* Write the following.

- (a). Contrapositive:
- (b). Converse:
- (c). Inverse:

Which of Contrapositive, Converse, and/or Inverse is equivalent to the original statement?

6. Rewrite the following statement in “If-then” form.

Prove that every rational number is algebraic.