Section 1.2: subsets

Tuesday, September 23, 2014 3:04 PM

subsets:

set A is a subset of B if every member of A also belongs to B

A \(\mathcal{B}\)

This a subset of "

examples:

 $\{2,3,43 \leq N$ $N \not= \{2,3,4\}$ because, for example, 1 is not in $\{2,3,4\}$

 $\{2,3\} \subseteq \{2,3,4\}$ $\{2,3\} \subseteq \{2,3,4\}$ $\{2,3\} \neq \{2,3\}$ hecause $3 \neq \{2\}$

True or False:

N S Z

Z = N

T

F

$$Z \leq N$$

$$\{1, 2, 3, ... \mid 0\} \leq \{100, 99, 98, ... \mid \} T$$

$$\emptyset \leq \{2, 3\}$$

$$\text{in fact, } \emptyset \text{ is a subset of }$$

$$\text{every set, including itself}$$

disression: (will not be tested)
which is bisse?

{1,2,3,...}

{2,4,6,...}

5Ubsets:

A & B

proper subsets:

A < B

- set A is a proper subsect of B

if every member of A belongs

to B and there is at least one

member of B that is not in A

examples:

{ 2,33 < { 2,3, 73, 157 }

£ 2,33 ≠ {2,3}

need an excha element in here that isn't in the orther set - to have the first set be a proper subset

note: {2,3} = {2,3}

True or Filse?

TØCN

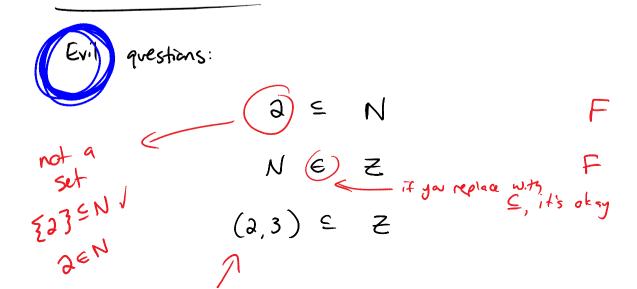
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T N C Z

T {2,43 C {X|X is an even integer}

F {2,4,6,... 3 C { y | y is an even natural number }

These sets are equal



$$\{(a,3)\} \subseteq \{(1,2),(a,3),(a,4)\}$$

 $(a,3) \in \{(1,a),(a,3),(a,4)\}$
 $N \in \{(a,3),(a,3),(a,4)\}$

use 6 to compare objects inside a set with the set itself

$$\underbrace{\mathcal{T}}_{\text{number}} \in \mathbb{N}$$
set of numbers

Non-wil questions:

True or False?

$$-3 \in Z$$
 T
 $-3 \in N$ F
 $\{-3\} = N$ F
 $\{-3\} \le Z$ T
 $\{-3\} \le \{-3\}$ T