

Come get graded quiz

## Announcements

- Self grade & Reflection Due Wednesday (more in class)

## Quiz

- Honor Code Discussion: TLDR: It's important. Make sure you know it now so no problems later.
- Structure questions

## Self Grade & Reflection

Proof Rubric:

Validity: logic ok?

Readability: Easy to understand?

Concise: More complicated than needs to be?

Provide a point score for each category →

$V = x$
$R = y$
$C = z$

Sample self-grade Activity...

Also

- Where to find solutions - CANVAS, "Files"
- Writing style - proofs do not need to be word for word the same as mine
- Reflection - see resources on website for worksheet
- Timing - ~30 min (at most 1 hour)

... and now back to your regularly scheduled lesson...

To do computer science, need to write & talk about  
computer science — use language of math:  
very Precise!

Proofs  $\approx$  5 paragraph essay

We need to go back and learn how to write words, sentences

↑  
sets

↑  
statements

## Sets

def: a set is an unordered collection of objects.  
(no repeats!)

ex: Let  $S$  be the set of Middlebury computer science  
profs.

- Prof. Kimmel is in  $S$

- Prof. Watson is not in  $S$ .

Rosterlist elements of set  
↓Notation:

$A = \{0, 2, 5\}$  means "A is the set containing the elements 0, 2, 5."

↑  
for sets "element" = "object"

$\in$ :  $2 \in A$  means 2 is an element of A

$\notin$ : Prof. Watson  $\notin S$  means Prof. Watson is not an element of S.

$A = B$ : sets contain exactly the same elements

Sets in Sets:  $T = \{x, y, \{g, h\}, k\}$

↑  
an element of a set can be another set

Q: Is  $g \in T$ ? Is  $\{g, h\} \in T$ ?

A) Yes. Yes.    B) Yes. No.    C) No. Yes.    D) No. No.

elements of T are x, y, {g, h}, k

\*Also  $\{x, y\} \notin T$

Famous Sets $\emptyset$  = empty set =  $\{\}$  $\mathbb{N}$  = set of natural numbers =  $\{0, 1, 2, 3, \dots\}$  $\mathbb{Z}$  = set of integers =  $\{\dots -3, -2, -1, 0, 1, 2, 3, \dots\}$  $\mathbb{R}$  = set of real numbers $\mathbb{Q}$  = set of rational numbers**NOTE**: In Book of Proof,  $\mathbb{N} = \{1, 2, 3, 4, \dots\}$ Set Builder Notation $B = \{\text{blah} : \text{blerg}\}$  means "B is the set of all things of the form blah, such that blerg"ex:  $E = \{2x : x \in \mathbb{Z}\} = \{-6, 0, 1000, \dots\}$   
 $= \{x : x \text{ is even}\}$ 

Notation:

 $O = \{x : x \text{ is odd}\}$  $O = \{x \mid x \text{ is odd}\}$ : } same meaning  
| }