

MATH 2001  
QUIZ 1

- 1.) (1 pt) Write your name in the top *right* corner of the page.
- 2.) (8 pts) Complete each statement so that is a precise definition.

i.) Two sets are *equal* if ...

they contain exactly the same elements.

ii.) A *finite set* is ...

a set containing finitely many elements.

iii.) If  $A$  is a finite set, the *cardinality* of  $A$  is ...

the number of distinct elements in  $A$ .

iv.) The set that contains zero elements is the ...

empty set.

- 3.) (7 pts) Let  $A = \{-4, -2, 3, 5, 6\}$ , and consider the expression:

$$B = \{x \in A : 3 \leq |x| \leq 6\}.$$

- (a) In words, write out the expression in the line above. (What would you say if you had to read this expression out loud?)

The set  $B$  is the set of all  $x$  in  $A$  where the absolute value of  $x$  is greater than or equal to 3 and less than or equal to 6.

- (b) Write out the set  $Y$  *explicitly* (using proper set notation).

$$Y = \{-4, 3, 5, 6\}.$$

- (c) Compute  $|A| + |B|$ .

$$|A| + |B| = 5 + 4 = 9.$$