

set theory

SET: COLLECTION OF THINGS / ELEMENTS

R: SET OF REAL NUMBERS

Q: SET OF RATIONAL NUMBERS

Z: SET OF INTEGERS $\{\dots, -2, -1, 0, 1, 2, \dots\}$

\mathbb{Z}_+ : SET OF POSITIVE INTEGERS $\{0, 1, 2, \dots\}$

N: SET OF NONZERO POSITIVE INTEGERS $\{1, 2, \dots\}$

OPERATIONS

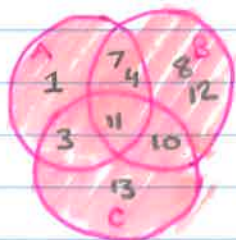
|A|: CARDINALITY: # OF ELEMENTS IN A

$A \cup B$: UNION: ELEMENTS CONTAINED IN AT LEAST ONE SET

$A \cap B$: INTERSECTION: ELEMENTS CONTAINED IN BOTH SETS

$A \setminus B$: DIFFERENCE: ELEMENTS IN A, NOT IN B

$A \Delta B$: SYMMETRIC DIFFERENCE: ELEMENTS IN EXACTLY ONE OF A OR B (XOR)



$$A = \{1, 3, 4, 7, 11\}$$

$$B = \{4, 7, 8, 11, 10, 12\}$$

$$C = \{3, 10, 11, 12\}$$

A