

§13.1 : Sets of Numbers

Real Numbers: all Rational and Irrational numbers

(R)

Rational Numbers: any # that can be written as a fraction (ratio) of 2 integers.

ex: $\frac{3}{5}$, $0.\overline{3} = \frac{1}{3}$

Integers: any # that can be written w/out a decimal component
ex: 5, 0, -4, ...

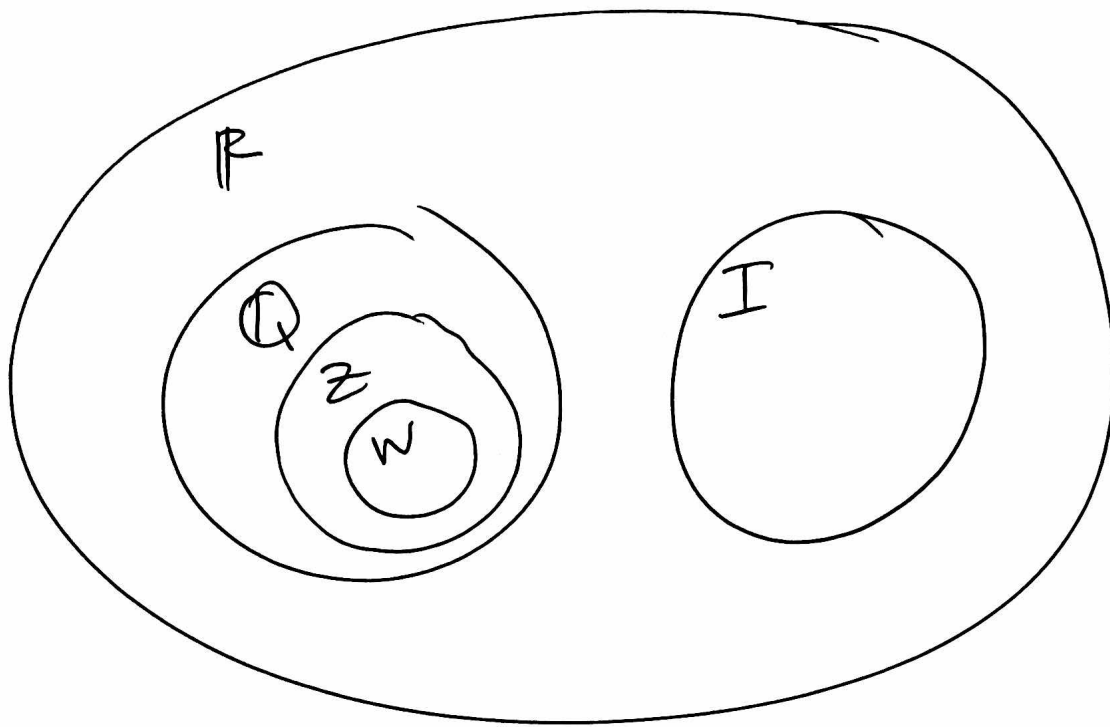
(Z)

Whole Numbers: "counting numbers" a.k.a. positive integers. (includes 0)

(W)

Irrational Numbers: any # that cannot be expressed as a ratio.
ex: $\sqrt{2}$, π , e

(I)



examples:

1. $-4 : Z, Q, R$
2. $0.6 : Q, R$
3. $\sqrt{7} : I, R$
4. $100 : W, Z, Q, R$

§ 13.2 Intersection + Union of sets of #s
 "and" "or"
 $\cap$ $\cup$

$$A = \{2, 4, 6, 8, 10\}$$

$$B = \{3, 6, 9\}$$

$$C = \{4, 8, 12, 16\}$$

ex: ① $A \cap B = \{6\}$

② $B \cap C = \{ \} \leftarrow \text{"empty set"}$

③ $A \cup B = \{2, 3, 4, 6, 8, 9, 10\}$

④ $A \cup C = \{2, 4, 6, 8, 10, 12, 16\}$

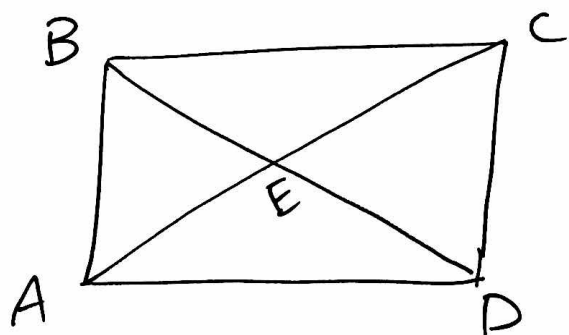
⑤ $(A \cup B) \cap C = \{4, 8\}$

⑥ $W \cup Z = Z$

⑦ $W \cap Z = W$

⑧ $Q \cup I = R$

⑨ $Q \cap I = \emptyset \leftarrow \text{"empty set"}$



⑩ $\overline{AB} \cap \overline{AD} = A$

⑪ $\overline{AB} \cup \overline{AD} = \angle BAD$

⑫ $\overline{BE} \cap \overline{BD} = \overline{BE}$

⑬ $\overline{BE} \cup \overline{BD} = \overline{BD}$

⑭ $\overline{AC} \cap \overline{BD} = E$

⑮ $\overline{AB} \cap \overline{CD} = \emptyset$