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Scribed Notes - Lecture 13

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Classification Relation :

Comparison operators are usually used in numeric operations.

Some equations about general relation sets :

Eq.1) $R : Z \rightarrow Z : (a,b) \in R \Leftrightarrow a < b$

$(a,b) \in R \Leftrightarrow a+b = 5$

Its operation results is :

- Irreflexive
- Symmetric
- Non-transitive

Eq.2) $(a,b) \in |a-b| \geq 150$ (Example of tutorial-2)

Its operation results is :

- Irreflexive
- Symmetric
- Non-transitive

Product of two numbers

$$\text{Eq.3) } (a,b) \in R \Leftrightarrow 0 < |a*b| \leq 50$$

It is finite pairs.

Easy to find infinite number using negative and positive number likewise

Its operation results is :

- Neither reflexive nor irreflexive
- Symmetric
- Non-transitive

Remainder

(Mod : %)

Examples :

$$(a,b) \in R \Leftrightarrow a \% b = 2$$

Its operation results is :

- Irreflexive

Another example :

$a = kb + 2$ then make two different equations,

$$a = (kb) + 2 \quad \text{---1 eq.}$$

$$b = (ka) + 2 \quad \text{---2 eq.}$$

Let's take $a = -4$ and $b = 6$

$$-4 \% 6 = 2$$

$$6 \% (-4) = 2 \text{ then}$$

It's **transitive**.