Prelecture

$T = \{(a, b, c) \mid a, b, c \in \mathbb{N} \text{ and } a = b = c\}$

1. $(0, 0, 0) \in T$
2. If $(a, b, c) \in T$

$F = \{x | x \in \mathbb{N} \text{ and the decimal representation of } x \text{ contains on 5s}\}$

$F = \{5, 55, 555, ...\}$

1. $5 \in F$
2. If $x \in F$ then $10x + 5 \in F$
3. Nothing else in F

```
public static boolean isInF(int n){
  if(n<10){
    if(n==5){
      return true;
    }else{
      return false
    }
  }else{
    int lastDigit = n % 10;
    int initialDigits = n/10;
    if(lastDigit==5){
      return isInF(initialDigits);
    }else{
      return false;
    }
  }
}
```

Lecture

Let $f : \mathbb{Z}^+ \to \mathbb{R}^+$ where $f(x) = \frac{1}{x}$

Is f one-to-one?

$f(x) = f(y)$

$\frac{1}{x} = \frac{1}{y}$

$\frac{y}{x} = \frac{y}{y}$

$\frac{xy}{x} = \frac{xy}{y}$

$y = x$