



## Why

We extend modular arithmetic to the real numbers.

## Definition

Two real numbers  $x, y \in \mathbf{R}$  are congruent modulo  $\alpha \in \mathbf{R}$  if their difference is a multiple of  $\alpha$

## Notation

For  $x, y \in \mathbf{R}$ , if  $x$  and  $y$  are congruent modulo  $\alpha \in \mathbf{R}$  we write

$$x \equiv y \pmod{\alpha}$$



