

## Equality Operators

### Example 1 : Basic Equality

The equality operator compares values:

$$\begin{aligned}x &= y \\x &\neq y\end{aligned}$$

### Example 2 : Equality elem Predicates

Equality is commonly used in quantified predicates:

$$\begin{aligned}\forall x : \mathbb{N} \bullet x = x \\ \exists y : \mathbb{Z} \bullet y = 0\end{aligned}$$

### Example 3 : Equality elem Set Comprehension

Using equality to define sets:

$$\begin{aligned}\{ z : \mathbb{Z} \mid z = 10 \} \\ \{ n : \mathbb{N} \mid n = n \}\end{aligned}$$

### Example 4 : Equality with Expressions

Equality can compare complex expressions:

$$\begin{aligned}\forall x, y : \mathbb{N} \bullet x + y = y + x \\ \exists a, b : \mathbb{Z} \bullet a * b = 0\end{aligned}$$