Why

We can give the same object two different names.

Definition

An object *is* itself. If the object that two names refer to is the same, then we say that the first name *equals* the second name.

Notation

We denote that the object named a and the object named b refer to the same object by $a = b$. We read this notation aloud as: "a is b" or "a equals b". We denote that the object a and b refer to different objects by $a \neq b$. We read this aloud as "a is not b" or "a does not equal b".

Other English readings of $a = b$ include: "a is the same as b", "a is equivalent to b", "a refers to the same object as b."

Properties

Given an object a, $a = a$ is true. We say that equivalence is *reflexive*. Given objects a and b, $a = b$ implues $b = a$. We say that equality is *symmetric*. Given objects a, b, and c, $a = b$ and $b = c$ implies $a = c$. We say that equality is *transitive*.

Identity

Objects