Identity : does not change the value of what
it is operating on.

Ex: 0 is the additive identity

$$7 + 0 = 7$$ operation is addition

1 is the multiplicative identity

$$7(1) = 7$$ operation is multiplication

There is an <u>Identity Function</u>
the operation is composition of functions

$$I(x) = x$$

What is the inverse of 7?
Has no unique answer

additive inverse of 7 is -7

because $7 + (-7) = 0$
           ↑   ↖ Identity
      operation

multiplicative inverse of 7 is $\frac{1}{7}$

because $7 \cdot \left(\frac{1}{7}\right) = 1$

because $7 \cdot \left(\frac{1}{7}\right) = 1$

Operation

Identity

For functions   operation is composition

Identity is $I(x) = x$