**Assignment Operators:**

Assignment operators assign values to variables.

| **Operator** | **Example** | **Description** |
| --- | --- | --- |
| = | x = 7 | Assigns value 7 to x |
| += | x += 3 | x = x + 3 |
| -= | x -= 2 | x = x - 2 |
| \*= | x \*= 4 | x = x \* 4 |
| /= | x /= 5 | x = x / 5 |
| //= | x //= 2 | x = x // 2 (integer division) |
| %= | x %= 3 | x = x % 3 (modulus) |
| \*\*= | x \*\*= 2 | x = x \*\* 2 (exponentiation) |

**Identity Operators:**

Identity operators compare memory locations:

| **Operator** | **Description** | **Example (assume a = b)** |
| --- | --- | --- |
| is | True if same object | a is b |
| is not | True if different object | a is not b |

**Membership Operators**

Membership operators test membership in a sequence (like lists, strings):

| **Operator** | **Description** | **Example** |
| --- | --- | --- |
| in | True if found in sequence | 'a' in 'apple' |
| not in | True if not found | 2 not in |

**Conditional Statements**

**if Statement**

**Syntax:if** condition:

*# body of if statement*

**Example:**

number = 5

**if** number > 0:

**print**("Positive number")

**if.else Statement**

**Syntax:**

**if** condition:

*# body of if statement*

**else**:

*# body of else statement*

**Example:**

python

number = 0

**if** number > 0:

**print**("Positive number")

**else**:

**print**("Not a positive number")

**if...elif...else Ladder**

**Syntax:**

**if** condition1:

*# body of if*

**elif** condition2:

*# body of elif*

**else**:

*# body of else*

**Example:**

python

number = 0

**if** number > 0:

**print**("Positive")

**elif** number == 0:

**print**("Zero")

**else**:

**print**("Negative")

**Simplified Syntax:**

Python allows single-line conditional expressions:

**print**("Positive") **if** number > 0 **else** **print**("Not positive")