**Subject of Formula**

**What is "Subject of Formula"?**

The **subject of a formula** is the variable that appears by itself on one side of the equal sign. When we "make a variable the subject," we rearrange the formula so that variable stands alone on one side.

For example, in the formula **A = lw** (area of rectangle), **A** is the subject.

**Step-by-Step Process**

1. **Identify** the variable you want to make the subject
2. **Look** at what operations are being performed on that variable
3. **Apply inverse operations** in reverse order (following BODMAS backwards)
4. **Keep the equation balanced** by doing the same to both sides

**Inverse Operations Reminder**

| **Operation** | **Inverse Operation** |
| --- | --- |
| + (add) | - (subtract) |
| - (subtract) | + (add) |
| × (multiply) | ÷ (divide) |
| ÷ (divide) | × (multiply) |
| ² (square) | √ (square root) |
| √ (square root) | ² (square) |

**Worked Examples**

**Example 1:**

**Make *w* the subject of A = lw**

Starting formula: A = lw

**w = A/l**

**Example 2:**

**Make *h* the subject of A = ½(a + b)h**

Starting formula: A = ½(a + b)h

**h = 2A/(a + b)**

**Example 3:**

**Make *r* the subject of A = πr²**

Starting formula: A = πr²

**r = √(A/π)**

**Example 4:**

**Make *b* the subject of a = 2b - 3**

Starting formula: a = 2b - 3

**b = (a + 3)/2**

**Practice Exercises**

**Easy Level**

1. Make x the subject of: y = 3x
2. Make a the subject of: P = 4a
3. Make t the subject of: d = 5t

**Medium Level**

1. Make w the subject of: P = 2l + 2w
2. Make h the subject of: V = lwh
3. Make r the subject of: C = 2πr

**Challenging Level**

1. Make x the subject of: y = 3x + 7
2. Make a the subject of: s = ut + ½at²
3. Make b the subject of: √(a² + b²) = c