# COMPLEX NUMBERS

## INTRODUCTION

Complex numbers are the numbers which are expressed in the form of **a+ib** where 'i' is an imaginary number called **iota** and has the value of ($\sqrt{-1}$). For example, 2+3i is a complex number, where 2 is a real number and 3i is an imaginary number. Therefore, the **combination of both the real number and imaginary number is a complex number**

## NOTE
### ADDITION

$$(a + ib) + (c + id) = (a + c) + i(b + d)$$

### SUBRACTION

$$(a + ib) - (c + id) = (a - c) + i(b - d)$$

## EXAMPLE SUMS

Q.1Simplify

a) 16i + 10i(3 –i)

b) (7i)(5i)

c) 11i + 13i − 2i

Solution:

a) 16i + 10i(3 –i)

= 16i + 10i(3) + 10i (–i)

= 16i +30i − 10 i$_2$

= 46 i − 10 (–1)

= 46i + 10

b) (7i)(5i) = 35  i$_2$ = 35 (–1) = –35

c) 11i + 13i − 2i = 22i

Q.2 Write the given complex number $(1 - i) - (-1 + i6)$ in the form $a + ib$

**Solution:**

Given Complex number: $(1 - i) - (-1 + i6)$

Multiply $(-)$ by the term inside the second bracket $(-1 + i6)$

$= 1 - i + 1 - i6$

$= 2 - 7i$, which is of the form $a + ib$