

**4. In each of the following cases, find a and b.**

**(i)  $(2a + b, a - b) = (8, 3)$**

**(ii)  $(a/4, a - 2b) = (0, 6 + b)$**

**Solution:**

(i)

According to the question,

$$(2a + b, a - b) = (8, 3)$$

Given the ordered pairs are equal, so corresponding elements will be equal.

Hence,

$$2a + b = 8 \text{ and } a - b = 3$$

$$\text{Now } a - b = 3$$

$$\Rightarrow a = 3 + b$$

Substituting the value of a in the equation  $2a + b = 8$ ,

We get,

$$2(3 + b) + b = 8$$

$$\Rightarrow 6 + 2b + b = 8$$

$$\Rightarrow 3b = 8 - 6 = 2$$

$$\Rightarrow b = 2/3$$

Substituting the value of b in equation  $(a - b = 3)$ ,

We get,

$$\Rightarrow a - 2/3 = 3$$

$$\Rightarrow a = 3 + 2/3$$

$$\Rightarrow a = (9 + 2)/3$$

$$\Rightarrow a = 11/3$$

Hence the value of  $a = 11/3$  and  $b = 2/3$  respectively.

**NOTE: Use similar approach for part (ii) for practice.**