

## CHAPTER 06

## Progressions

Determine the A.P whose 3<sup>rd</sup> term is 5 and the 7<sup>th</sup> term is '9'.

**Sol.**

We have,

$$a_3 = a + (3 - 1)d = a + 2d = 5 \dots\dots\dots (1)$$

$$a_7 = a + (7 - 1)d = a + 6d = 9 \dots\dots\dots (2)$$

Solve (1) & (2),

$$(1) - (2) \Rightarrow a + 2d = 5$$

$$a + 6d = 9$$

$$\begin{array}{r} - \\ \hline -4d = -4 \\ \hline \end{array}$$

$$d = \frac{4}{4}$$

$$d = 1$$

Substitute  $d = 1$  in equation (1),

$$a + 2(1) = 5$$

$$\Rightarrow a + 2 = 5$$

$$\Rightarrow a = 5 - 2 = 3$$

$$\therefore a = 3$$

Hence, the required A.P is 3, 4, 5, 6, 7...

