

Ex 3.7 Questions 2, 3

②  $2x + 3y = 11 \dots \textcircled{1}$

$2x - 4y = -24 \dots \textcircled{II}$

$\textcircled{1} - \textcircled{II}$

$$\begin{array}{r} 2x + 3y = 11 \\ 2x - 4y = -24 \\ \hline - \quad + \quad + \end{array}$$

$7y = 35$

$\Rightarrow y = \frac{35}{7}$

$\Rightarrow y = 5$

Sub. value of  $y$  in  $\textcircled{1}$

$2x + 3 \times 5 = 11$

$\Rightarrow 2x = 11 - 15$

$\Rightarrow x = \frac{-4}{2}$

$= -2$

$\therefore x = -2, y = 5$

$y = mx + 3$

but  $x = -2, y = 5$

$5 = m(-2) + 3$

$-2m = 5 - 3$

$\Rightarrow m = \frac{2}{-2}$

$= -1$

③ i let the numbers be  $x$  and  $y$

acc. to condition I

$x - y = 26 \dots \textcircled{1}$

acc. to condition II

$x = 3y$

$\Rightarrow x - 3y = 0 \dots \textcircled{II}$

$\Rightarrow x = 3y \dots \textcircled{III}$

Sub. value of  $x$  from  $\textcircled{III}$  in  $\textcircled{1}$

$3y - y = 26$

$\Rightarrow 2y = 26$

$\Rightarrow y = \frac{26}{2}$

$\Rightarrow y = 13$

Sub. value of  $y$  in  $\textcircled{III}$

$x = 3 \times 13$

$= 39$

$\therefore x = 39, y = 13$