

Ex 3.4 Question 1

$$1 \textcircled{i} \quad x + y = 5 \dots \textcircled{i}$$

$$2x - 3y = 4 \dots \textcircled{ii}$$

$$\textcircled{i} \times 3 + \textcircled{ii} \times 1$$

$$3x + 3y = 15$$

$$2x - 3y = 4$$

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$$5x = 19$$

$$\Rightarrow x = \frac{19}{5}$$

Sub  $\textcircled{i}$

$$\frac{19}{5} + y = 5$$

$$\Rightarrow y = 5 - \frac{19}{5}$$

$$= \frac{25 - 19}{5}$$

$$= \frac{6}{5}$$

$$\therefore x = \frac{19}{5}, y = \frac{6}{5}$$

$$1 \textcircled{ii} \quad 3x + 4y = 10 \dots \textcircled{i}$$

$$2x - 2y = 2 \dots \textcircled{ii}$$

$$\textcircled{i} \times 1 + \textcircled{ii} \times 2$$

$$3x + 4y = 10$$

$$4x - 4y = 4$$

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$$7x = 14$$

$$\Rightarrow x = \frac{14}{7}$$

$$\Rightarrow x = 2$$

Sub  $\textcircled{ii}$

$$2 \times 2 - 2y = 2$$

$$-2y = 2 - 4$$

$$y = \frac{-2}{-2}$$

$$y = 1$$

$$\therefore x = 2, y = 1$$

$$1 \textcircled{iii} \quad 3x - 5y - 4 = 0 \dots \textcircled{i} \times 3$$

$$9x - 2y - 7 = 0 \dots \textcircled{ii} \times 3$$

$$\textcircled{i} \times 3 - \textcircled{ii} \times 1$$

$$9x - 15y - 12 = 0$$

$$9x - 2y - 7 = 0$$

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$$-13y - 5 = 0$$

$$\Rightarrow y = -\frac{5}{13}$$

Sub  $\textcircled{i}$

$$3x + \frac{25}{13} - 4 = 0$$

$$\Rightarrow 3x = 4 - \frac{25}{13}$$

$$= \frac{52 - 25}{13}$$

$$\Rightarrow x = \frac{27}{13 \times 3}$$

$$= \frac{9}{13}$$

$$\therefore x = \frac{9}{13}, y = -\frac{5}{13}$$

$$1 \textcircled{iv} \quad \frac{x}{2} + \frac{2y}{3} = -1$$

$$(x6) \quad 3x + 4y = -6 \dots \textcircled{i}$$

$$x - \frac{y}{3} = 3$$

$$(x3) \quad 3x - y = 9 \dots \textcircled{ii}$$

$$\textcircled{i} - \textcircled{ii}$$

$$3x + 4y = -6$$

$$3x - y = 9$$

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$$5y = -15$$

$$\Rightarrow y = -3$$

Sub  $\textcircled{ii}$

$$3x + 3 = 9$$

$$\Rightarrow 3x = 6$$

$$\Rightarrow x = 2$$

$$\therefore x = 2, y = -3$$