

$$\textcircled{1} \begin{cases} 6x - 3y + 10 = 0 \\ 2x - y + 9 = 0 \end{cases}$$

$$\frac{a_1}{a_2} = \frac{6}{2}, \frac{b_1}{b_2} = \frac{-3}{-1}, \frac{c_1}{c_2} = \frac{10}{9}$$

$$= \frac{3}{1} = \frac{3}{1}$$

$$\therefore \frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$$

$$\textcircled{2} \begin{cases} x + 2y + 5 = 0 \\ -3x - 6y + 1 = 0 \end{cases}$$

$$\frac{a_1}{a_2} = \frac{1}{-3}, \frac{b_1}{b_2} = \frac{2}{-6}, \frac{c_1}{c_2} = \frac{5}{1}$$

$$= -\frac{1}{3} = -\frac{1}{3}$$

$$\therefore \frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2} \text{ (D)}$$

$\textcircled{3}$  (C) intersecting or coincident

$\textcircled{4}$  (D) no solution

$\textcircled{5}$  (D) intersecting at (a, b)

$\textcircled{6}$  For coincident lines

$$\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$$

$$\frac{3}{6} = \frac{-1}{-k} = \frac{8}{16}$$

$$\Rightarrow \frac{1}{2} = \frac{1}{k} = \frac{1}{2}$$

$$\Rightarrow \frac{1}{2} = \frac{1}{k}$$

$$\Rightarrow k = 2$$

(C) 2

$$\textcircled{7} \begin{cases} 3x + 2ky - 2 = 0 \\ 2x + 5y + 1 = 0 \end{cases}$$

For parallel lines

$$\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$$

$$\frac{3}{2} = \frac{2k}{5} \neq -\frac{2}{1}$$

$$\frac{3}{2} = \frac{2k}{5} \quad \left| \quad \frac{3}{2} \neq -\frac{2}{1} \right.$$

$$k = \frac{15}{4}$$

$$\therefore k = \frac{15}{4}$$

(C)  $\frac{15}{4}$

$$\textcircled{8} \begin{cases} cx - y = 2 \\ 6x - 2y = 3 \end{cases}$$

For in. Many sols

$$\frac{c}{6} = \frac{-1}{-2} = \frac{2}{3}$$

$$\Rightarrow \frac{c}{6} = \frac{1}{2} = \frac{2}{3}$$

$\therefore \frac{1}{2} \neq \frac{2}{3}$  (D) no value