

$$2 \textcircled{1} \quad 2x + 3y = 7$$

$$(a-b)x + (a+b)y = 3a+b-2$$

$$\frac{a_1}{a_2} = \frac{2}{a-b}, \quad \frac{b_1}{b_2} = \frac{3}{a+b}, \quad \frac{c_1}{c_2} = \frac{7}{3a+b-2}$$

For inf. Many sols.

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

$$\frac{2}{a-b} = \frac{3}{a+b} = \frac{7}{3a+b-2}$$

$$\frac{2}{a-b} = \frac{3}{a+b}, \quad \frac{2}{a-b} = \frac{7}{3a+b-2}$$

$$\Rightarrow 2a + 2b = 3a - 3b$$

$$\Rightarrow -a = -5b$$

$$\Rightarrow a = 5b \dots \textcircled{1}$$

$$6a + 2b - 4 = 7a - 7b$$

$$\Rightarrow -a + 9b = 4$$

using (1)

$$-5b + 9b = 4$$

$$\Rightarrow 4b = 4$$

$$\Rightarrow b = \frac{4}{4}$$

$$\Rightarrow b = 1$$

Sub (1)

$$a = 5 \times 1 = 5$$

$$\therefore a = 5, b = 1$$