

Simultaneous Equations

1. (i)

$$x + y = 5$$

$$x - y = -1$$

(ii)

$$x + 2y = 5$$

$$x - 2y = -3$$

(iii)

$$x + y = -3$$

$$-x + y = -1$$

(iv)

$$2x + 3y = 5$$

$$x - 3y = 7$$

(v)

$$4x + y = \frac{19}{12}$$

$$-4x + 2y = -\frac{5}{6}$$

2. (i)

$$x + y = 3$$

$$3x - 2y = -1$$

(ii)

$$2x + y = 1$$

$$-x + 3y = 10$$

(iii)

$$4x + y = 11$$

$$3x - 2y = 11$$

(iv)

$$-x + 3y = 19$$

$$2x + y = 11$$

(v)

$$7x + y = 75$$

$$3x - 3y = -9$$

3. (i)

$$2x + 3y = 18$$

$$3x + y = 13$$

(ii)

$$3z + 2w = 24$$

$$4z + 3w = 33$$

(iii)

$$2s - 3t = 12$$

$$5s - 2t = 19$$

(iv)

$$7x - 2y = 3$$

$$2x + 3y = 8$$

(v)

$$5x - 3y = 8$$

$$2x + 7y = 77$$

4. (i)

$$x + y = 2$$

$$x = y$$

(ii)

$$y + 5 = x$$

$$x + 2y = 11$$

(iii)

$$3y + x = 8$$

$$2x - y = -5$$

(iv)

$$4 = x + y + 2$$

$$x = 2y + 2x - 14$$

(v)

$$7 = x$$

$$2y - x = 7$$

5. (i)

$$\frac{x}{2} + \frac{y}{2} = 1$$

$$\frac{3x}{2} + \frac{2y}{3} = \frac{7}{4}$$

(ii)

$$-\frac{x}{4} + \frac{y}{2} = \frac{57}{14}$$

$$\frac{x}{3} + \frac{y}{5} = -\frac{284}{105}$$

(iii)

$$\frac{z}{4} = \frac{a}{3}$$

$$\frac{2z}{3} + a = \frac{17}{3}$$

(iv)

$$-\frac{3\alpha}{7} + \frac{\beta}{2} = \frac{4}{7}$$
$$-\alpha = \beta - 3$$

(v)

$$\frac{\gamma}{7} + \frac{\delta}{4} = \frac{37}{28}$$
$$\frac{\delta}{2} = \frac{7\gamma}{22} + \frac{5}{22}$$