

the constraint  $x+2y=0$  can't be satisfied for  $x=+ve$  and  $y=+ve$ .

Now, let's calculate  $y$  for  $x = -\sqrt{2\lambda}$ .

$$4\lambda y - \lambda x - 1 = 0 \text{ from equation (ii)}$$

$$\text{For } x = -\sqrt{2\lambda}.$$

$$4\lambda y + \sqrt{2\lambda} \cdot \lambda - 1 = 0$$

$$\text{or } y = \frac{1 - \sqrt{2\lambda} \cdot \lambda}{4\lambda}.$$

Now, putting this value in  $x+2y=0$

$$-\sqrt{2\lambda} + 2 \times \left( \frac{1 - \sqrt{2\lambda} \cdot \lambda}{4\lambda} \right) = 0$$

$$\text{or } -\sqrt{2\lambda} \cdot 2\lambda + 1 - \sqrt{2\lambda} \cdot \lambda = 0$$

$$\text{or } +3\lambda \cdot \sqrt{2\lambda} = +1$$

$$\text{or } \lambda \cdot \sqrt{2\lambda} = \frac{1}{3}$$

$$\text{or } \lambda^2 \times 2\lambda = \frac{1}{9}$$

$$\text{or } \lambda^3 = \frac{1}{18}$$

$$\text{or } \lambda = \sqrt[3]{\frac{1}{18}}$$

$$x = -\sqrt{2\lambda} = -\sqrt[3]{\frac{2}{3}} = -\left(\frac{2}{3}\right)^{1/3}$$

$$y = \frac{1 + x\lambda}{4\lambda} = \frac{1 - \left(\frac{2}{3}\right)^{1/3} \times \left(\frac{1}{18}\right)^{1/3}}{4 \times \left(\frac{1}{18}\right)^{1/3}}$$

$$= \frac{1 - \left(\frac{2}{3}\right)^{1/3} \times \frac{1}{(3)^{2/3} \times (2)^{1/3}}}{2 - 1}$$