

$$\frac{1}{r} = \frac{\Delta y}{\Delta x} = \frac{m-k}{a} \rightarrow m-k=r$$

$$\sqrt{(m-k)^2 + 4^2} = \sqrt{a^2} = r\sqrt{5}$$

$$5 = (r\sqrt{5})^2 = 5r^2$$

$$m_{AB} = m_{CD} \rightarrow \frac{-r}{r+1} = \frac{+1}{-1-r} \rightarrow r = \frac{r}{r}$$

$$AB \parallel BC \rightarrow \frac{r}{r} \times \frac{y-1}{\frac{r}{r}} = -1 \rightarrow y = -1$$

$$AB = \sqrt{(r+1)^2 + (1-r)^2} = a$$

$$AB \neq a$$

$$BC = \sqrt{\frac{a}{r} + 1} = \frac{a}{r}$$

$$\frac{1}{r} = \frac{10}{r} + 10 = 10$$

$$\frac{-rm}{m^2-1} = \tan 45^\circ = \sqrt{3}$$

$$\frac{-rm}{m^2-1} = \frac{\sqrt{3}m^2 - \sqrt{3}}{m^2-1} = \sqrt{3}$$

$$D = (r\sqrt{3})^2 - 4(-1) = 19$$

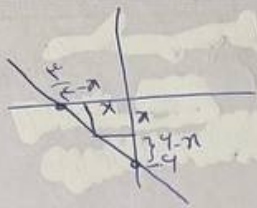
$$\frac{\sqrt{D}}{2a} = \frac{e}{\sqrt{3}}$$

$$m_{BC} = \frac{11-r}{r-1} = 2 \quad y^2 = 2(x-1) \quad y = 2x-1 \quad y-2x+1=0$$

$$\frac{|-2(1)+1(4)+1|}{\sqrt{1+4}} = \frac{10}{\sqrt{5}}$$

$$y - \frac{r}{r}x + \frac{19}{r} = y + 2x - 1 \rightarrow x = r \quad y = 1 \quad B(3, 1)$$

$$\frac{|r(1) - r(3) - 19|}{\sqrt{r^2 + r^2}} = \frac{22}{r}$$



$$\frac{\frac{x}{c} - n}{n} = \frac{n}{4n} \rightarrow n = \frac{1n}{4} \frac{x}{c}$$

$$x^2 = (100)^2 \rightarrow x = \frac{c}{a} = 10$$

$$y = \frac{100}{x} = \frac{c}{100}$$

6

$$m = m' \rightarrow a = 1$$

$$a = 1 \quad y - ax = 1 \quad \left(\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}} \right) \checkmark$$

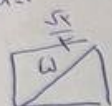
$$a = 1 \quad x$$

$$y = x = 1$$

$$y - x = 0$$

$$\frac{1 \cdot 1}{\sqrt{1+1}} = \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$ay - x = a \cdot 1$$



$$\left(\frac{\sqrt{2}}{2} \right)^2 + x^2 = 1^2$$

$$x^2 = 1 - \frac{1}{2} = \frac{1}{2}$$

$$x = \frac{1}{\sqrt{2}}$$

$$y = \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{2} = \frac{1}{2}$$

7

$$\frac{|x-1|}{\sqrt{1+x^2}} = \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{1}{\sqrt{2}}$$

$$x = \sqrt{1 - \frac{1}{2}} = \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{1}{\sqrt{2}}$$



$$x = \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{2} = \frac{1}{2}$$

8

$$y - a = \sqrt{2} \left(x + \frac{1}{\sqrt{2}} \right)$$

$$\frac{\sqrt{2}}{2} + a = \frac{\sqrt{2}}{2} + b$$

$$\frac{\sqrt{2}}{2} + a = b$$

$$y - b = \sqrt{2} \left(x + \frac{1}{\sqrt{2}} \right)$$

$$\sqrt{\left(\frac{1}{\sqrt{2}} + \frac{1}{\sqrt{2}} \right)^2 + \left(b - a \right)^2} = \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} \text{ (given)}$$

$$\sqrt{2} \times \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2} \text{ (given)}$$

9

$$m = \frac{-1}{-2} = \frac{1}{2} \rightarrow m = \frac{1}{2} = \frac{x}{c} \rightarrow (x, -1) \rightarrow y = \frac{x}{2} - \frac{1}{2}$$

$$\frac{1}{m} = \frac{1}{\frac{1}{2}} = 2 \rightarrow x^2 + y^2 = 2$$

سید سعادت محمد

$$\frac{b}{a} \times \frac{c}{x} = -1 \rightarrow b = -\frac{x}{c} a \quad xy = 1$$

10

$$a^2 + \left(\frac{x}{c} a \right)^2 = 2 \rightarrow a^2 = 14 \rightarrow a = \sqrt{14} \rightarrow b = 3$$

$$\frac{x}{c} n = \frac{10}{c} = \frac{1}{2} n = \frac{10}{2} = 5 \rightarrow y = -1$$

$$(-1, 3) \rightarrow y - 3 = \frac{1}{2} (x + 1)$$