

8.5

$$C = \left(\frac{1+\sqrt{5}}{2}, \frac{1+\sqrt{5}}{2} \right) = (3,3)$$

$$k_{AB} = \frac{\Delta y}{\Delta x} = \frac{3-1}{5-1} = \frac{2}{4} = \frac{1}{2}$$

$$k_2 \cdot k_{AB} = -1 \quad (\Rightarrow) k_2 = -\frac{1}{k_{AB}} = -\frac{1}{\frac{1}{2}} = -2$$

bersikurnawala:

$$y - 3 = -2(x - 3) \quad (\Rightarrow) y = -2x + 6$$

FTAI: y -abselin jirite $(0, 6) = D$

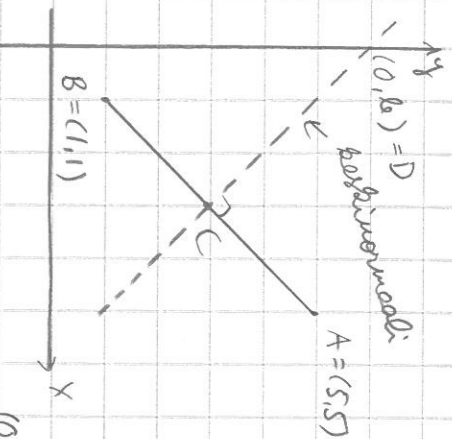
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$$|AD| = |BD| \quad (\Rightarrow) \sqrt{(5-0)^2 + (5-6)^2} = \sqrt{(1-0)^2 + (1-6)^2} \quad |1|^2$$

$$(\Rightarrow) 25 + (5-6)^2 = 1 + (1-6)^2$$

$$(\Rightarrow) 25 + 25 - 10 \cdot 6 + 6^2 = 1 + 1 - 2 \cdot 6 + 6^2$$

$$(\Rightarrow) 48 = 8 \cdot 6 \quad (\Rightarrow) k_2 = 6 \quad \Rightarrow D = (0, 6)$$



9.5

$$6x - 3y + 4 = 0 \quad (x, y)$$

$$d = \frac{|6x - 3y + 4|}{\sqrt{6^2 + (-3)^2}} = \frac{|6x - 3y + 4|}{\sqrt{45}} = \sqrt{5} \cdot \frac{|6x - 3y + 4|}{\sqrt{45}}$$

$$(\Rightarrow) |6x - 3y + 4| = \sqrt{45} \sqrt{5} = \sqrt{45 \cdot 5} = \sqrt{225} = 15$$

$$(\Rightarrow) 6x - 3y + 4 = 15 \quad \text{Kai} \quad 6x - 3y + 4 = -15$$

$$(\Rightarrow) 6x - 3y - 11 = 0 \quad \text{Kai} \quad 6x - 3y + 19 = 0$$

FTAI: Ekarangge nuruwa = $\sqrt{5} \Rightarrow$ nuruwa gdenwurtaiset

$$\Rightarrow 6x - 3y + a = 0$$

Waltean nuruwa $6x - 3y + 4 = 0$ jorai jirite, sin.

$$(0, \frac{4}{3}) : 6 \cdot 0 - 3 \cdot \frac{4}{3} + 4 = 0$$

$$d = \frac{|6 \cdot 0 - 3 \cdot \frac{4}{3} + a|}{\sqrt{6^2 + (-3)^2}} = \frac{|a - 4|}{\sqrt{45}} = \sqrt{5} \cdot \frac{|a - 4|}{\sqrt{45}}$$

$$(\Rightarrow) |a - 4| = \sqrt{45} \cdot \sqrt{5} = 15$$

$$(\Rightarrow) a - 4 = 15 \quad \text{Kai} \quad a - 4 = -15 \quad (\Rightarrow) a = 15 \quad \text{Kai} \quad a = -11$$

$$\Rightarrow 6x - 3y + 19 = 0 \quad \text{Kai} \quad 6x - 3y - 11 = 0$$

9.7

$$2x - y - 1 = 0$$

$$4x + 2y + 1 = 0$$

Pirite (x, y) an bulman-

juwal thajallo

(\Rightarrow) jirite an jirite barbare
no nuruwa

$$d_1 = d_2 \quad (\Rightarrow) \frac{|2x - y - 1|}{\sqrt{2^2 + (-1)^2}} = \frac{|4x + 2y + 1|}{\sqrt{4^2 + 2^2}}$$

$$(\Rightarrow) \frac{|2x - y - 1|}{\sqrt{5}} = \frac{|4x + 2y + 1|}{\sqrt{20}} \quad | \cdot \sqrt{20} \quad (= \sqrt{4 \cdot 5} = 2\sqrt{5})$$

$$(\Rightarrow) 2|2x - y - 1| = |4x + 2y + 1| \quad (2 \geq 0)$$

$$(\Rightarrow) |2(2x - y - 1)| = |4x + 2y + 1|$$

$$(\Rightarrow) 2|2x - y - 1| = 4x + 2y + 1 \quad \text{Kai} \quad 2|2x - y - 1| = -(4x + 2y + 1)$$

$$(\Rightarrow) -4y = 3 \quad \text{Kai} \quad 8x = 1 \quad (\Rightarrow) y = -\frac{3}{4} \quad \text{Kai} \quad x = \frac{1}{8}$$

$$(-1, 3), (4, -5) : k = \frac{\Delta y}{\Delta x} = \frac{-5-3}{4-(-1)} = \frac{-8}{5}$$

$$\Rightarrow y - 3 = -\frac{8}{5}(x - (-1)) \quad | \cdot 5 \quad (\Rightarrow) 8x + 5y - 7 = 0$$

$$(7, 2) : d = \frac{|8 \cdot 7 + 5 \cdot 2 - 7|}{\sqrt{8^2 + 5^2}} = \frac{59}{\sqrt{89}}$$

9.13

$$y = x + 6 \quad (\Rightarrow) x - y + 6 = 0$$

$$2x + 2y - 5 = 0$$

$(a, 7)$

$$d_1 = d_2 \quad (\Rightarrow) \frac{|a - 7 + 6|}{\sqrt{1^2 + (-1)^2}} = \frac{|2a + 2 \cdot 7 - 5|}{\sqrt{2^2 + 2^2}}$$

$$(\Rightarrow) \frac{|a - 1|}{\sqrt{2}} = \frac{|2a + 9|}{\sqrt{8}} \quad | \cdot \sqrt{8} \quad (= \sqrt{4 \cdot 2} = 2\sqrt{2})$$

$$(\Rightarrow) 2|a - 1| = |2a + 9| \quad (\Rightarrow) |2(a - 1)| = |2a + 9|$$

$$(\Rightarrow) 2(a - 1) = 2a + 9 \quad \text{Kai} \quad 2(a - 1) = -(2a + 9)$$

$$(\Rightarrow) -2 = 9 \quad \text{Kai} \quad 4a = -7 \quad (\Rightarrow) a = -\frac{7}{4}$$

10.1

$$a) k_{AB} = (0, 0), n = 3 : x^2 + y^2 = 9$$

$$b) k_{AB} = (2, 5), n = \sqrt{21} : (x - 2)^2 + (y - 5)^2 = 21$$

$$c) k_{AB} = (3, -4), n = 2\frac{1}{2} = \frac{5}{2} : (x - 3)^2 + (y + 4)^2 = \frac{25}{4}$$

10.5

$$a) k_{AB} = (2, 1), n = 2 : (x - 2)^2 + (y - 1)^2 = 4$$

$$x = 1 : (1 - 2)^2 + (y - 1)^2 = 4 \quad (\Rightarrow) (y - 1)^2 = 3 \quad | \sqrt{\quad}$$

$$(\Rightarrow) y - 1 = \pm \sqrt{3} \quad (\Rightarrow) y = 1 \pm \sqrt{3}$$

$$b) 3y = 4x + 20 \quad (\Rightarrow) 4x - 3y + 20 = 0$$

8.7

$$12x - 3y + 4 = 0 \quad | : 3 \quad (\Rightarrow) y = \frac{7}{3}x + \frac{4}{3} \Rightarrow k_1 = \frac{7}{3}$$

$$k_1 \cdot k_2 = \frac{7}{3} \cdot \left(-\frac{3}{7}\right) = -1 \Rightarrow \text{an bersikurnawala}$$

$$k_2 = -\frac{3}{7} \quad (\Rightarrow) k_2 = \frac{\Delta y}{\Delta x} = \frac{-4 - (-1)}{5 - (-2)} = \frac{-3}{7}$$

bersikurnawala:

$$y - (-1) = -\frac{3}{7}(x - \frac{11}{2}) \quad | \cdot 2 \quad (\Rightarrow) 2y + 2 = -(x - \frac{11}{2}) \quad | \cdot 2$$

FTAI: y -abselin jirite $(0, 6) = D$

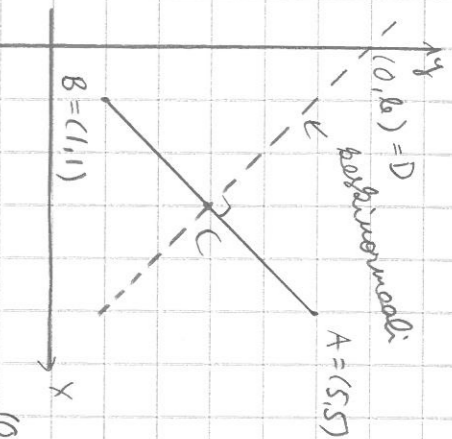
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$$(\Rightarrow) 48 = 8 \cdot 6 \quad (\Rightarrow) k_2 = 6 \quad \Rightarrow D = (0, 6)$$



8.13

$$2x - y - 1 = 0$$

$$d = \frac{|2x - y - 1|}{\sqrt{2^2 + (-1)^2}} = \frac{|4x + 2y + 1|}{\sqrt{4^2 + 2^2}}$$

$$(\Rightarrow) |2x - y - 1| = \sqrt{45} \sqrt{5} = \sqrt{45 \cdot 5} = \sqrt{225} = 15$$

$$(\Rightarrow) 2x - y - 1 = 15 \quad \text{Kai} \quad 2x - y - 1 = -15$$

$$(\Rightarrow) 2x - y + 14 = 0 \quad \text{Kai} \quad 2x - y - 16 = 0$$

FTAI: Ekarangge nuruwa = $\sqrt{5} \Rightarrow$ nuruwa gdenwurtaiset

$$\Rightarrow 2x - y + a = 0$$

Waltean nuruwa $2x - y - 1 = 0$ jorai jirite, sin.

$$(0, \frac{1}{2}) : 2 \cdot 0 - y - 1 = 0$$

$$d = \frac{|2 \cdot 0 - \frac{1}{2} - 1|}{\sqrt{2^2 + (-1)^2}} = \frac{|-\frac{3}{2}|}{\sqrt{5}} = \frac{3}{2\sqrt{5}}$$

$$(\Rightarrow) |a - 1| = \sqrt{45} \cdot \frac{3}{2\sqrt{5}} = 15$$

$$(\Rightarrow) a - 1 = 15 \quad \text{Kai} \quad a - 1 = -15 \quad (\Rightarrow) a = 16 \quad \text{Kai} \quad a = -14$$

$$\Rightarrow 2x - y + 16 = 0 \quad \text{Kai} \quad 2x - y - 14 = 0$$

8.21

$$2x - 3y + 4 = 0 \quad | : 3 \quad (\Rightarrow) y = \frac{2}{3}x + \frac{4}{3}$$

$$12x + 28y - 5 = 0 \quad | : 28 \quad (\Rightarrow) y = -\frac{3}{7}x + \frac{5}{28} \Rightarrow k_2 = -\frac{3}{7}$$

$(\Rightarrow) k_1 \cdot k_2 = \frac{2}{3} \cdot \left(-\frac{3}{7}\right) = -1 \Rightarrow$ an bersikurnawala

$$k_2 = -\frac{3}{7} \quad (\Rightarrow) k_2 = \frac{\Delta y}{\Delta x} = \frac{-4 - (-1)}{5 - (-2)} = \frac{-3}{7}$$

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$$(-1, 3), (-5, -1) : k_1 = \frac{\Delta y}{\Delta x} = \frac{-6 - (-1)}{2 - (-5)} = \frac{-5}{7}$$

$$\Rightarrow y - 3 = -\frac{5}{7}(x - (-1)) \quad | \cdot 7 \quad (\Rightarrow) 7y - 21 = -5x - 5$$

$$(7, 2) : d = \frac{|7 \cdot 2 - 5 \cdot 2 - 7|}{\sqrt{7^2 + 5^2}} = \frac{59}{\sqrt{89}}$$

8.15

$$y = x + 6 \quad (\Rightarrow) x - y + 6 = 0$$

$$2x + 2y - 5 = 0$$

$(a, 7)$

$$d_1 = d_2 \quad (\Rightarrow) \frac{|a - 7 + 6|}{\sqrt{1^2 + (-1)^2}} = \frac{|2a + 2 \cdot 7 - 5|}{\sqrt{2^2 + 2^2}}$$

$$(\Rightarrow) \frac{|a - 1|}{\sqrt{2}} = \frac{|2a + 9|}{\sqrt{8}} \quad | \cdot \sqrt{8} \quad (= \sqrt{4 \cdot 2} = 2\sqrt{2})$$

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$$(\Rightarrow) -2 = 9 \quad \text{Kai} \quad 4a = -7 \quad (\Rightarrow) a = -\frac{7}{4}$$

9.1

$$a) 6x + 8y + 11 = 0 \quad (4, 3)$$

$$b) -7x + 24y - 61 = 0 \quad (4, 3)$$

$$d = \frac{|-7 \cdot 4 + 24 \cdot 3 - 61|}{\sqrt{(-7)^2 + 24^2}} = \frac{|-28 + 72 - 61|}{25} = \frac{|-17|}{25} = \frac{17}{25}$$

5.3

$$k_1 = k_2 \quad (\Rightarrow) \frac{18 + 19}{5} = \frac{13}{15} \quad | \cdot 15$$

$$(\Rightarrow) 18 + 19 = \frac{13}{3} \quad (\Rightarrow) 18 + 19 = -\frac{13}{3} \quad (\Rightarrow) k = -\frac{44}{3} \quad \text{Kai} \quad k = -\frac{20}{3}$$

$$b) 3x + 4y + 2 = 0 \quad (1, 4)$$

$$-12x + 9y - 11 = 0 \quad (1, 4)$$

$$d_2 = \frac{|-12 \cdot 1 + 9 \cdot 4 - 11|}{\sqrt{(-12)^2 + 9^2}} = \frac{|113|}{15} = \frac{113}{15}$$

$$d_1 = d_2 \quad (\Rightarrow) \frac{18 + 19}{5} = \frac{13}{15} \quad | \cdot 15$$

$$(\Rightarrow) 18 + 19 = \frac{13}{3}$$

$$(\Rightarrow) 18 + 19 = -\frac{13}{3} \quad (\Rightarrow) k = -\frac{44}{3} \quad \text{Kai} \quad k = -\frac{20}{3}$$