

$$PQ = d_1 = \sqrt{11^2 + 36} = \sqrt{40} = 2\sqrt{10}$$

$$PO = \frac{1}{2} PQ = \sqrt{10}$$

$$AO = \sqrt{AP^2 - PO^2} = \sqrt{50 - 10} = 2\sqrt{10}$$

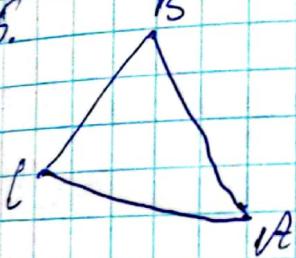
$$AB = d_2 = \sqrt{AP^2} = 4\sqrt{10}$$

$$s = \frac{1}{2} d_1 d_2 \Rightarrow h = \frac{\frac{1}{2} d_1 d_2}{AP} = \frac{\frac{1}{2} \cdot 2\sqrt{10} \cdot 4\sqrt{10}}{5\sqrt{2}} = \frac{40}{5\sqrt{2}} = 4\sqrt{2}$$

$$s = \sqrt{d_1 d_2}$$

$$\text{Fig. } h = 4\sqrt{2}. //$$

45.  $A(5; 0)$ ,  $B(0; 1)$ ,  $C(3; 3)$ .



$$\text{Signe mecanica cosinusului } a^2 = b^2 + c^2 - 2bc \cos \alpha \Rightarrow$$

$$\Rightarrow \cos \alpha = \frac{b^2 + c^2 - a^2}{2bc}$$

daca  $\alpha \in (0; \frac{\pi}{2})$ , atunci  $\cos \alpha > 0$ .

daca  $\alpha \in (\frac{\pi}{2}; \pi)$ , atunci  $\cos \alpha < 0$

$$AB = \sqrt{25 + 1} = \sqrt{26} = \sqrt{2} \cdot \sqrt{13}$$

$$BC = \sqrt{9 + 4} = \sqrt{13}$$

$$AC = \sqrt{4 + 9} = \sqrt{13}$$

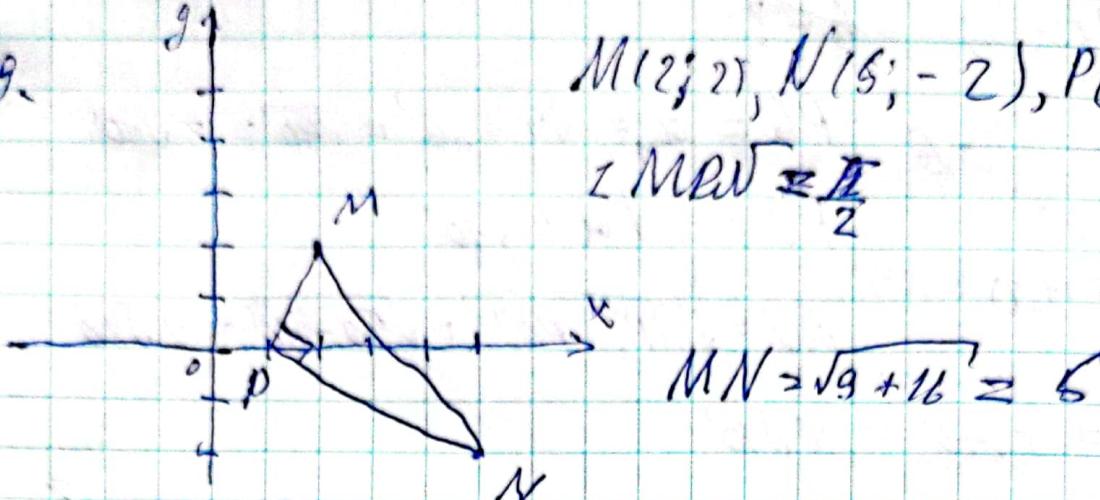
$$\cos(\widehat{AB, BC}) = \frac{2 \cdot 4\sqrt{13} - 13}{2\sqrt{2} \cdot \sqrt{13}} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2} \Rightarrow (\widehat{AB, BC}) = \frac{\pi}{4}$$

$$BC = AC \Rightarrow \cos(\widehat{AB, AC}) = \cos(\widehat{AB, BC}) = \frac{\pi}{4} \Rightarrow$$

$$\Rightarrow \widehat{BC, AC} = \frac{\pi}{2}$$

$$\text{Fig. } (\widehat{AB, BC}) = \frac{\pi}{4}, (\widehat{AB, AC}) = \frac{\pi}{4}, (\widehat{BC, AC}) = \frac{\pi}{2}.$$

29.



$$M(2; 2), N(5; -2), P(x; 0)$$

$$\angle MPN = \frac{\pi}{2}$$

$$MN = \sqrt{9 + 16} = 5$$

$\Delta MPN$  - гипотенузный  $\Rightarrow$

$$\Rightarrow (2-x)^2 + (2-y)^2 + (5-x)^2 + (-2-y)^2 = 25$$

$$(2-x)^2 + 4 + (5-x)^2 + 4 = 25;$$

$$(2-x)^2 + (5-x)^2 = 12;$$

$$4 - 4x + x^2 + 25 - 10x + x^2 = 12;$$

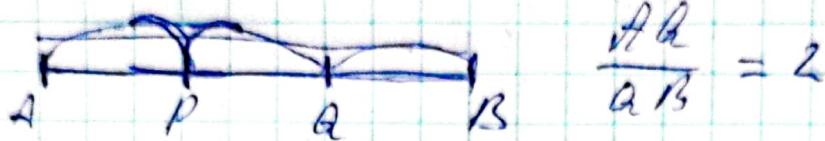
$$2x^2 - 14x + 12 = 0;$$

$$x^2 - 7x + 6 = 0;$$

$$x_1 = 6, x_2 = 1$$

Big.  $P_1(6; 0), P_2(1; 0)$ . //

109.  $P(2; 2)$ ,  $Q(1; 5)$ . A, B - ?



$$\frac{PQ}{AB} = 2$$

~~$$2 = \frac{x_A + 1}{2} \Rightarrow x_A = 3$$~~

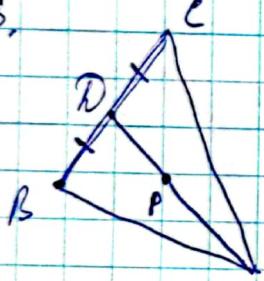
~~$$2 = \frac{y_A + 5}{2} \Rightarrow y_A = -1$$~~

~~$$1 = \frac{2 + x_B}{2} \Rightarrow x_B = 0$$~~

~~$$5 = \frac{2 + y_B}{2} \Rightarrow y_B = 8$$~~

Fig. A (3; -1), B (0; 8).

115.



$A(4; 2)$ ,  $B(7; -2)$ ,  $C(1; 6)$

Нехай м. Р - геометрическі координати вершини

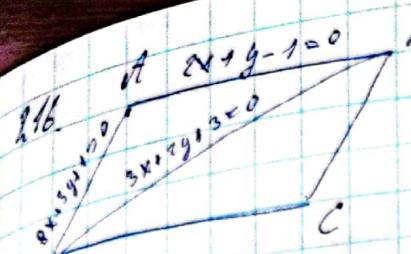
м. Р - місце розташування центральної медіаны  $\triangle ABC \Rightarrow$   
 $\frac{AP}{PD} = 2$ ,  $PD$  - медіана

$$x_D = \frac{x_A + x_B}{2} = 4 \quad y_D = \frac{y_A + y_B}{2} = 2 \quad D(4; 2)$$

$$x_P = \frac{2x_A + x_D}{1+2} = \frac{4 + 2 \cdot 4}{1+2} = \frac{12}{3} = 4;$$

$$y_P = \frac{2y_A + y_D}{1+2} = \frac{2 + 2 \cdot 2}{1+2} = \frac{6}{3} = 2;$$

Fig. P (4; 2).



136. А:  $\begin{cases} 8x+y-1=0 \quad |1 \\ 8x+3y+1=0 \end{cases}$

$$\begin{aligned} y-5=0; \quad x &= \frac{-9}{2}; \\ y &= 5; \quad x = -2; \quad A(-2, 5) \end{aligned}$$

В:  $\begin{cases} 8x+y-1=0 \quad |2 \\ 3x+2y+8=0 \end{cases}$

$$\begin{aligned} x-5 &= 0; \quad y = 9; \\ x &= 5; \quad B(5, -3) \end{aligned}$$

Д:  $\begin{cases} 8x+3y+11=0 \quad |2 \\ 3x+2y+3=0 \quad |3 \end{cases}$

$$\begin{aligned} 4x-4 &= 0; \quad 3y = -9; \\ x &= 1; \quad y = -3; \quad D(1, -3) \end{aligned}$$

Л: ~~1/2(5+1-11+3)~~

Биз. А(-2, 5), В(5, -3), Д(1, -3).

135. АВ:  $4x-y-7=0$

АС:  $x+3y-31=0$

ВС:  $x+5y-4=0$

Знайдемо координати т. А, ~~Б~~ В і С

А:  $\begin{cases} 4x-y-7=0 \quad |3 \\ x+3y-31=0 \end{cases} \quad |+$   $13x-52=0 \Rightarrow x = 4 \quad A(4, 9)$

В:  $\begin{cases} 4x-y-7=0 \quad |5 \\ x+5y-4=0 \end{cases} \quad |+$   $21x-42=0 \Rightarrow x = 2 \quad B(2, 1)$

~~Підставимо координати в рівняння~~

С:  $\begin{cases} x+3y-31=0 \quad |+ \\ x+5y-4=0 \end{cases} \quad |+$   $-2y-27=0 \Rightarrow y = -13 \quad C(67, -12)$

Координати вершин А, В, С

$k_{AB} = \frac{1-9}{2-4} = 4 \quad k_{AC} = \frac{-12-1}{67-2} = -\frac{1}{5}$

Buzvarintmo leidin būtum:

$$k_{AB} = -\frac{1}{4} \quad k_{AA_1} = 5$$

P-ke būtum mae būsēg  $y = 6x + 6$ . Tājmatubūm koordinatātā ietilpību & līnijas p-kei.

$$\text{A}_1 : y = 5x - 11$$

$$(L_1 : y = -\frac{1}{4}x + 4,45)$$

Zināmo koordinatām T. P ierakstīt būtum:

$$\begin{aligned} P: \quad 5x - 11 &= 3x - 5 \Rightarrow 2x = 6 \Rightarrow x = 3 \\ y &= 15 - 11 = 4 \end{aligned}$$

$$\text{Bīg. } P(3, 4).$$

$$255. \quad A(-4; 5), \quad BD = 4x - 9 + 8 = 0$$

Man ek griez kādiem, cym mīdā gārāmēto i īspējotā  
zepībūtās  $45^\circ \Rightarrow$  tā cym zepībūtās 1. Zināmo apakši sej  
stiprii  $AB$ :

$$k_{BD} = -\frac{4y}{(-1)} = 4$$

$$\frac{4 - k_{AB}}{1 + 4k_{AB}} = 1 \Rightarrow k_{AB} = \frac{3}{4}$$

P-kei  $AB$  stāvātie būsēgi:

$$y - 5 = \frac{3}{4}(x + 4) \Rightarrow 3x - 4y + 32 = 0,$$

$AB \perp AC$   $\Rightarrow$  coēp.  $AC$ :

$$k_{AC} = -\frac{4}{3}$$

P-krad ABD:

$$y-5 = -\frac{4}{3}(x+4) \Rightarrow 4x + 3y + 1 = 0 //$$

Знайдемо координати T, B:

$$\begin{cases} 4x - y + 8 = 0, 14 \\ 8x - 4y + 32 = 0 \end{cases} \quad | \cdot 2 \quad | \cdot 5 \Rightarrow x = 0 \\ y = 8 \quad \quad \quad B(0; 8)$$

Знайдемо координати T, D:

$$\begin{cases} 4x - y + 8 = 0, 13 \\ 4x + 3y + 1 = 0 \end{cases} \quad | \cdot 2 \quad | \cdot 5 \Rightarrow x = -1 \\ y = -7 + 8 = 1 \quad D(-1; 1)$$

P-kradимою PCL:

$$y - 8 = -\frac{4}{3}(x+4) \Rightarrow 4x + 3y - 24 = 0 //$$

P-kradимою BD:

$$y - 1 = \frac{3}{4}(x+4) \Rightarrow 3x - 4y + 7 = 0 //$$

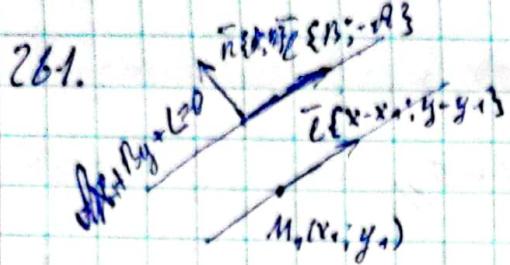
$$AC \perp BD \Rightarrow k_{AC} = -\frac{1}{3}$$

P-krad AC:

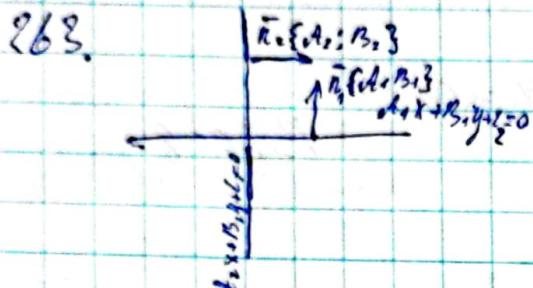
$$y - 5 = -\frac{1}{3}(x+4) \Rightarrow x + 3y - 31 = 0 //$$

$$\text{Rig. } 8x - 4y + 32 = 0; 4x + 3y + 1 = 0; 4x + 3y - 24 = 0; 8x - 4y + 32 = 0;$$

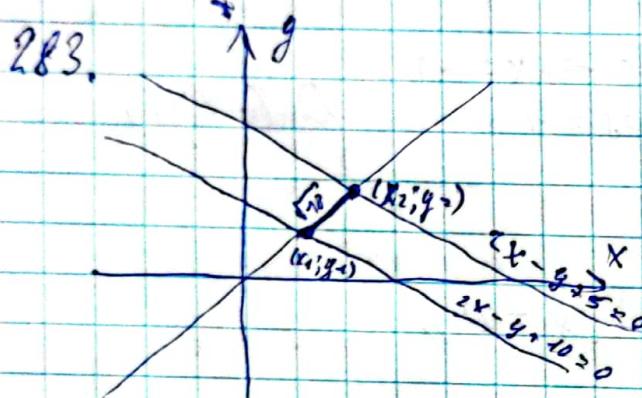
$$x + 3y - 31 = 0 //$$



Две прямые:  $Ax + By + l_1 = 0$  нормаль  $\vec{n} = \{A, B\}$   
направляющий вектор  $\vec{l} = \{B; -A\}$   
Две прямые, ака проходит через  $m$ - $M_1(x_1, y_1)$   
 $Ax + By + l_2 = 0 : \vec{l} = \{x - x_1; y - y_1\}$   
 $\vec{l} \cdot \vec{n} = 0 \Rightarrow A(x_1 - x_1) + B(y_1 - y_1) = 0 //$



Две прямые:  $A_1x + B_1y + l_1 = 0$  нормаль  $\vec{n}_1 = \{A_1, B_1\}$   
Две прямые:  $A_2x + B_2y + l_2 = 0$  нормаль  $\vec{n}_2 = \{A_2, B_2\}$   
 $\vec{n}_1 \cdot \vec{n}_2 = 0 \Rightarrow$   
 $\Rightarrow A_1A_2 + B_1B_2 = 0 //$



$$\begin{cases} 2x_1 - y_1 + 10 = 0 \\ 2x_2 - y_2 + 5 = 0 \\ (y_2 - y_1)^2 + (x_2 - x_1)^2 = 10 \\ y_1 - kx_1 = 0 \\ y_2 - kx_2 = 0 \end{cases}$$

$$\begin{cases} y_1 = kx_1 \\ y_2 = kx_2 \end{cases} \quad \begin{cases} 2x_1 - kx_1 + 10 = 0 \\ 2x_2 - kx_2 + 5 = 0 \\ k^2(x_2 - x_1)^2 + (x_2 - x_1)^2 = 10 \end{cases}$$

$$\begin{cases} (2-k)x_1 + 10 = 0 \\ (2-k)x_2 + 5 = 0 \\ (k^2+1)(x_2 - x_1)^2 = 10 \end{cases} \quad \begin{cases} (2-k)x_1 + 10 = 0 \\ (2-k)x_2 + 5 = 0 \\ (2-k)(x_2 - x_1) = 5 \\ (k^2+1)(x_2 - x_1)^2 = 10 \end{cases} \Rightarrow (k^2+1) \frac{25}{(2-k)^2} = 10^2$$

$$5 \frac{(k^2+1)}{(2-k)^2} = 2;$$

$$5(k^2+1) - 2(2-k)^2 = 0;$$

$$5(k^2+1) - 2(4-4k+k^2) = 0;$$

$$5k^2 + 5 - 8 + 8k - k^2 = 0;$$

$$4k^2 + 8k - 3 = 0;$$

$$\Delta = 100, \sqrt{\Delta} = 10$$

$$k_1 = \frac{-8+10}{8} = \frac{1}{4}, \quad k_2 = \frac{-8-10}{8} = \frac{-3}{4}$$

$$\text{реш. } 3y - x = 0 //$$

$$y + 3x = 0 //$$

$$294. mx + (2m+3)y + m + 6 = 0, (2m+1)x + (m-1)y + m - 2 = 0$$

$$\frac{m}{2m+1} \neq \frac{2m+3}{m-1}$$

$$m^2 - m \neq 4m^2 + 6m + 2m + 3$$

$$3m^2 + 8m + 3 \neq 0$$

$$m^2 + 3m + 1 \neq 0 \Rightarrow m_1 \neq \frac{-3 - \sqrt{5}}{2}, m_2 \neq \frac{-3 + \sqrt{5}}{2}$$

$$\begin{cases} (2m+3)y + m + 6 = 0, \\ (m-1)y + m - 2 = 0; \end{cases}$$

$$(2m+3)\left(\frac{2-m}{m-1}\right) + m + 6 = 0$$

$$4m - 2m^2 + 6 - 3m + m^2 - m + 6m - 6 = 0;$$

$$-m^2 + 6m = 0;$$

$$m_1 = 0, m_2 = 6;$$

Big. 0; b-11

$$300. 3x - 4y - 12 = 0$$

$$A: x = 0$$

$$-4y - 12 = 0 \Rightarrow y = -3 \quad (0, -3)$$

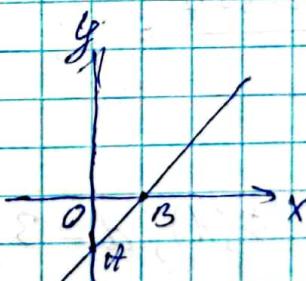
$$B: y = 0$$

$$3x - 12 = 0 \Rightarrow x = 4 \quad (4, 0)$$

$$Oa = 3, OB = 4$$

$$l = \frac{3-4}{2} = 6;$$

Big. 6, 11



$$321. AB: x+21y-22=0$$

$$BC: 5x+12y+7=0$$

$$let: 4x+33y+146=0$$

$$A: \begin{cases} x+21y-22=0, 14 \\ 4x+33y+146=0; \end{cases} \left| - \begin{array}{l} 114y-334=0 \\ x=-20 \end{array} \right. \Rightarrow y=2 \quad (-20; 2)$$

$$B: \begin{cases} x+21y-22=0, 15 \\ 5x+12y+7=0; \end{cases} \left| - \begin{array}{l} 114y-117=0 \\ x=1 \end{array} \right. \Rightarrow y=1 \quad (1; 1)$$

$$C: \begin{cases} 5x+12y+7=0, 14 \\ 4x+33y+146=0; 15 \end{cases} \left| - \begin{array}{l} 114y-402=0 \\ x=\frac{65}{5}=13 \end{array} \right. \Rightarrow y=6 \quad (13; 6)$$

$$T, P - \text{себялннлк: } x_p = \frac{-20+1+13}{3} = -2$$

$$y_p = \frac{2+1+6}{3} = 3 \quad (-2; 3)$$

Норм. р-ннлк BC:

$$\frac{5x+12y+7=0}{-\sqrt{25+144}} = \frac{5x+12y+7}{-13}$$

$$d_p = \frac{5 \cdot (-2) + 12 \cdot 3 + 7}{-13} = 3;$$

Риг. 3.

$$324. P(2; 5), Q(5; 1), d=3$$

$$k = \frac{1}{k'}$$

Р-ннлк нормалнк нуравннлеко y бирнеги:  $y-5 = \frac{1}{k'}(x-2)$ , този

$$\frac{x-Q'y+5k'-2}{\sqrt{k'^2+1'}} = \delta - \text{норм. р-ннлк}$$

$$5 - Q'y + 5k' - 2 = \delta (\sqrt{k'^2+1'})$$

$$4k' - 3 = \delta (\sqrt{k'^2+1'}) \text{ ик}$$

$$16k'^2 + 24k' + 9 = 9k'^2 + 9$$

$$7k'^2 + 24k' = 0 \quad k'_1 = 0, \quad k'_2 = -\frac{24}{7} \Rightarrow \text{р-ннлк:}$$

$$k'(7k'+24)=0$$

$$x-2=0 \quad 4x+24y+54=0$$

$$\text{ggf. } 4x - 3y + 3 = 0, 4x - 3y - 17 = 0, R(12; -3)$$

$$\text{d. \& } 4x - 3y - 17 = 0$$

$$k_{AB} = -\frac{4}{3}, k_{BC} = \frac{3}{4}$$

$$\begin{array}{|c|c|} \hline & 4x - 3y - 17 = 0 \\ \hline \end{array}$$

$$D: 4x - 3y - 17 = 0$$

$$\text{vgl.: } \cancel{4x + 3 = \frac{8}{3}(x - 2)}; \quad 3x + 4y + l = 0$$

$$\cancel{4x + 3 = \frac{8}{3}(x - 2)}; \\ \cancel{4x + 3 = \frac{8}{3}x - \frac{16}{3}}; \\ \cancel{3x - 4y - 18 = 0}$$

$$3x + 4y + l = 0$$

$$3 \cdot 2 + 4 \cdot 1 - 3) + l = 0$$

$$6 + 12 + l = 0$$

$$l = -18 \Rightarrow 3x + 4y + 6 = 0 //$$

Ergebnisse d. minc  $4x - 3y + 3$  i  $4x - 3y - 17 = 0$ :

$$d = \frac{13 + 171}{\sqrt{16 + 9}} = \frac{20}{5} = 4;$$

Max. der Distanz - Abstand, d. minc  $3x + 4y + 6 = 0$  i  $3x + 4y + l = 0$

gleichwertig zu  $4$ :

$$\text{N: } d = \frac{16 - (-1)}{\sqrt{9 + 16}} = 4;$$

$$b - l < 0 \quad b - l > 0$$

$$b - l = -20 \quad b - l = 20$$

$$l = 26 \quad l = -14$$

$$\text{Rd: } 3x + 4y + 26 = 0 \text{ add } 3x + 4y - 14 = 0 //$$

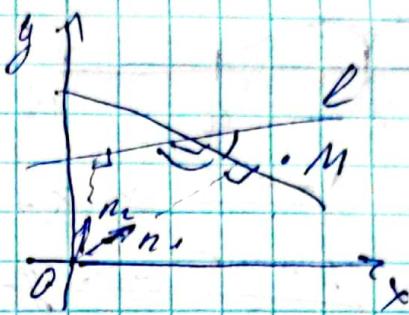
$$\text{Rdg: } 3x + 4y + 6 = 0; 3x + 4y + 26 \text{ add } 3x + 4y - 14 = 0 - //$$

$$349. \quad x+2y-11=0, \quad 3x-6y-5=0, \quad M(1; -3)$$

$$\bar{m}_1 = \{1; 2\} \text{ ПН}_1$$

$$\bar{m}_2 = \{3; 6\} \text{ ПН}_2$$

$$(\bar{m}_1, \bar{m}_2) = 3+12 = 15 > 0$$



$\Rightarrow$  Т. О шешімдегі жаңындаурынан

$$D(0; 0) : -11 < 0 \quad M(1; -3) : 1 - 6 - 11 < 0 \text{ жоғарыда}$$

$$-5 < 0 \quad 3 + 36 - 5 > 0 \text{ низеңде}$$

$\Rightarrow$  Т.О і Т.М шешімдегі үшіншінші айналар  $\Rightarrow$  Т.М бір заманауы

Р-кін десекциялау жаңындаура

$$\frac{|x+2y-11|}{\sqrt{5}} = \frac{|3x-6y-5|}{\sqrt{3}}$$

$$|3x+6y-33| = |3x-6y-5|$$

$$\begin{array}{ll} + & - \\ 6x-38=0 & 12y-28=0 \end{array}$$

$$\begin{array}{ll} 3x-19=0 & 3y-7=0 \end{array}$$

$$\begin{cases} 3x-19=0 \\ 3y-7=0 \end{cases}$$

$$P(11; 0) \in l$$

$$d_1 = \frac{|33-19|}{3} = \frac{4}{3} \Rightarrow \text{десекциялау жаңындаура,}$$

$$d_2 = \frac{|-7|}{3} = \frac{7}{3}$$

$$\text{Біз } 3x-19=0. \quad //$$

$$351. \quad 3x + 4y - 5 = 0, \quad 5x - 12y + 3 = 0$$

P-IIIIE дісеканули сим'ю руна

~~18x + 8y~~

$$3x + 4y - 5 = 0$$

$$+ 5x - 12y + 3 = 0$$

$$\frac{18x + 4y - 5}{5} = \frac{1 - 5y + 12y - 3}{13}$$

$$| 39x + 52y - 65 | = | -25x + 60y - 15 |$$

+ -

$$14x + 112y - 80 = 0 \quad 64x - 8y - 50 = 0$$

$$7x + 56y - 40 = 0 \quad 82x - 4y - 25 = 0$$

$$\begin{cases} 7x + 56y - 40 = 0 \\ 82x - 4y - 25 = 0 \end{cases}$$

$$M(0; 0,25) \in l$$

$$d_1 = \frac{|156 \cdot 0,25 - 40|}{\sqrt{3185}} = \frac{2065}{35} \Rightarrow \text{дісеканула сим'ю руна}$$

$$d_2 = \frac{|1 - 4 \cdot 0,25 - 40|}{\sqrt{1090}} = \frac{41\sqrt{65}}{200}$$

$$\text{Рівн. } 7x + 56y - 40 = 0. \quad 4$$

$$368. \quad d(12x - 3y + 20) + \beta(3x + 5y - 24) = 0, \quad x + 7y - 16 = 0$$

P-IIIIE 2-ї гідрону мінімум бути:

$$(2 + 3\delta)x + (-3 + 5\delta)y + (20 - 24\delta) = 0$$

$$1(2 + 3\delta) + 7(-3 + 5\delta) = 0;$$

$$2 + 3\delta - 21 + 35\delta = 0;$$

$$38\delta - 19 = 0;$$

$$\delta = \frac{1}{2}$$

$$\frac{2}{3}x - \frac{1}{2}y + \frac{13}{2} = 0;$$

$$4x - y + 13 = 0 \rightarrow \text{p-mre 2-oi giavarmi}$$

9 2-oi giavarmi  $k_2 = 4$ , y 1-oi smopam  $k = \frac{2+3\delta}{3-5\delta}$

$$\text{tg } 4 = \frac{\frac{2+3\delta}{3-5\delta} - 4}{1 + 4 \cdot \frac{2+3\delta}{3-5\delta}} = 1; \quad \frac{2+3\delta}{3-5\delta} - 4 = 1 + 4 \cdot \frac{2+3\delta}{3-5\delta};$$

$$6 \cdot \frac{2+3\delta}{3-5\delta} = -8; \quad \frac{2+3\delta}{3-5\delta} = -\frac{4}{3}; \quad 3(2+3\delta) + 4(3-5\delta) = 0;$$

$$6+9\delta + 12 - 20\delta = 0; \quad -11\delta + 18 = 0; \quad \delta = \frac{18}{11};$$

$$\frac{46}{11}x + \frac{54}{11}y - \frac{266}{11} = 0; \quad 46x + 54y - 266 = 0;$$

$$4x + 3y - 14 = 0 \rightarrow \text{p-mre 1-oi smopam};$$

9-mre 2-oi smopam?

$$\text{tg } 4 = \frac{\frac{2+3\delta}{3-5\delta} - 4}{1 + 4 \cdot \frac{2+3\delta}{3-5\delta}} = -1; \Rightarrow 8 \cdot \frac{2+3\delta}{3-5\delta} = 6; \quad \frac{2+3\delta}{3-5\delta} = \frac{3}{4};$$

$$4(2+3\delta) - 3(3-5\delta) = 0 \Rightarrow 24\delta - 1 = 0; \quad \delta = \frac{1}{24}$$

$$\frac{19}{3}x - \frac{76}{24}y + 19 = 0; \quad \frac{1}{9}x - \frac{4}{24}y + 1 = 0; \quad 3x - 4y + 24 = 0 \rightarrow \text{p-mre 2-oi smopam}$$

$$\text{Birzha } (x+4y-16) + \delta(3x-4y+24) = 0$$

$$4(1+3\delta)x + (14-4\delta)y + (-16+24\delta) = 0, \quad y \text{ nei } k = \frac{1+3\delta}{4\delta-4}$$

9 1-oi giavarmi  $k = -\frac{1}{4}$

$$\text{tg } 4 = -\frac{1}{4} - \frac{\frac{1+3\delta}{4\delta-4}}{1 - \frac{1}{4} \cdot \frac{1+3\delta}{4\delta-4}} = 1 \Rightarrow \frac{1+3\delta}{4\delta-4} = -\frac{4}{3} \Rightarrow 25\delta - 25 = 0; \quad \delta = 1$$

$$4x + 3y + 11 = 0 \rightarrow \text{8-oi smopam}$$

$$\text{Birzha 4-oi smopam: } (2x-y+13) + \delta(4x+3y+11) = 0;$$

$$(7+4\delta)x + (1+3\delta)y + (13+11\delta) = 0, \quad \text{mogi } k = \frac{7+4\delta}{4\delta-4}. \quad \text{Delle } 4x+3y+11=0 \\ \text{tg } 4 = \frac{7+4\delta}{4\delta-4} + \frac{4}{3} = -1 \Rightarrow (7+4\delta) + 3(-1+3\delta) = 0; \quad 28+16\delta+3+9\delta = 0$$

$$\text{mogi } \frac{7+4\delta}{4\delta-4} = -1 \rightarrow \text{4-oi smopam}$$

$$\text{mogi } [3x-4y+2=0] - 4-oi smopam$$

$$374. 5x+y-5=0, x-2y+10=0, (1-1; -2), d=5$$

$$\text{7. Find } \begin{cases} 5x+y-5=0, 12 \\ x-2y+10=0, \end{cases}$$

$$\begin{aligned} & \cancel{5x+y-5=0, 12} \\ & \cancel{x-2y+10=0,} \end{aligned}$$

$$3x + y - 5 + \lambda(x - 2y + 10) = 0;$$

$$(3+\lambda)x + (1-2\lambda)y - (5-10\lambda) = 0;$$

$$-(3+\lambda) - 2(1-2\lambda) - (5-10\lambda) = 5\sqrt{(3+\lambda)^2 + (1-2\lambda)^2};$$

$$-3-\lambda - 2 + 4\lambda - 5 + 10\lambda = 5\sqrt{9 + 6\lambda + \lambda^2 + 1 - 4\lambda + 4\lambda^2};$$

$$13\lambda - 10 = 5\sqrt{5\lambda^2 + 2\lambda + 10} \parallel 2$$

$$(13\lambda - 10)^2 = 25(5\lambda^2 + 2\lambda + 10);$$

$$169\lambda^2 - 260\lambda + 100 = 125\lambda^2 + 50\lambda + 250;$$

$$44\lambda^2 - 310\lambda - 150 = 0;$$

$$\Delta = -310^2 - 4 \cdot 44 \cdot 150 = 122500, \sqrt{\Delta} = 350;$$

$$\lambda_1 = \frac{310 + 350}{88} = \frac{15}{2}, \lambda_2 = \frac{310 - 350}{88} = -\frac{40}{88} = -\frac{5}{11}$$

$$(3 + \frac{15}{2})x + (1 - 2 \cdot \frac{15}{2})y - (5 - 10 \cdot \frac{15}{2}) = 0;$$

$$\boxed{3x - 4y + 20 = 0}$$

$$(3 - \frac{5}{11})x + (1 + 2 \cdot \frac{5}{11})y - (5 + 10 \cdot \frac{5}{11}) = 0;$$

$$\boxed{4x + 8y - 15 = 0}$$

$$\alpha_1(5x+sy-2) + \beta_1(3x-y-4) = 0,$$

$$\alpha_2(x-y+1) + \beta_2(2x-y-2) = 0$$

$$(5+3\lambda_1)x + (3-\lambda_1)y + (-2-4\lambda_1) = 0$$

$$(1+2\lambda_1)x + (-1-\lambda_1)y + (1-2\lambda_2) = 0$$

$$\frac{\lambda_2}{\lambda_1} = \frac{1+2\lambda_2}{5+3\lambda_1}, \quad \frac{\lambda_2}{\lambda_1} = \frac{-1-\lambda_2}{3-\lambda_1}, \quad \frac{\lambda_2}{\lambda_1} = \frac{1-2\lambda_2}{-2-4\lambda_1}, \quad \text{gilt } \lambda_1 \neq -\frac{5}{3}, \lambda_1 \neq 3, \lambda_1 \neq -\frac{1}{2}$$

$$\frac{1+2\lambda_2}{5+3\lambda_1} = \frac{-1-\lambda_2}{3-\lambda_1} \Rightarrow (1+2\lambda_2)(3-\lambda_1) = (-1-\lambda_2)(5+3\lambda_1)$$

$$\frac{1+2\lambda_2}{5+3\lambda_1} = \frac{1-2\lambda_2}{-2-4\lambda_1} \Rightarrow (1+2\lambda_2)(-2-4\lambda_1) = (5+3\lambda_1)(1-2\lambda_2)$$

$$\begin{cases} 2\lambda_1 + \lambda_1\lambda_2 + 11\lambda_2 + 8 = 0, \\ -2\lambda_1 - 2\lambda_1\lambda_2 + 6\lambda_2 - 4 = 0; \end{cases} \Rightarrow \lambda_1 = \frac{-11\lambda_2 - 8}{2 + \lambda_2}$$

$$-2 \frac{-11\lambda_2 - 8}{2 + \lambda_2} - 2 \frac{(-11\lambda_2 - 8)\lambda_2}{2 + \lambda_2} + 6\lambda_2 - 4 = 0;$$

$$-2 \frac{-11\lambda_2 - 8}{2 + \lambda_2} - 2\lambda_2(-11\lambda_2 - 8) + 6\lambda_2(2 + \lambda_2) - 4(2 + \lambda_2) = 0$$

$$74\lambda_2^2 + 56 + 22\lambda_2^2 + 16\lambda_2 + 12\lambda_2 + 6\lambda_2^2 - 14 - 4\lambda_2 = 0$$

$$28\lambda_2^2 + 98\lambda_2 + 42 = 0;$$

$$2\lambda_2^2 + 4\lambda_2 + 3 = 0, \quad D = 25, \quad \sqrt{D} = 5$$

$$\lambda_2^{(1)} = -3, \quad \lambda_2^{(2)} = -\frac{1}{2};$$

$$\lambda_1^{(1)} = -25, \quad \lambda_1^{(2)} = -\frac{5}{3} - 14e^{i\pi/3}\text{ resp. } 14e^{-i\pi/3}$$

$$\lambda_1 = -25, \quad \lambda_2 = -3;$$

$$\text{Bsp. } 5x - 2y - 4 = 0 //$$