$k_1 \cdot k_2 = -1 \Leftrightarrow k_2 = -\frac{1}{k_1} = -\frac{1}{-\frac{1}{2}} = 2$

normaali: $y - 0 = 2(x - (-1)) \Leftrightarrow y = 2x + 2$

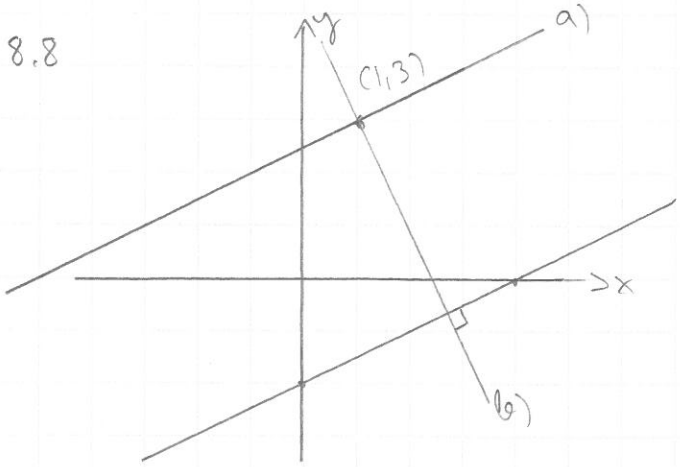
leiasanguste: $\begin{cases} x + 2y - 6 = 0 \\ y = 2x + 2 \end{cases}$ sij.

$\Rightarrow x + 2(2x+2) - 6 = 0 \Leftrightarrow x + 4x + 4 - 6 = 0 \Leftrightarrow 5x = 2 \Leftrightarrow x = \frac{2}{5}$

$\Rightarrow y = 2 \cdot \frac{2}{5} + 2 = \frac{4}{5} + \frac{10}{5} = \frac{14}{5}$

Vast. $\left(\frac{2}{5}, \frac{14}{5}\right)$

8.8



$x - 2y - 4 = 0 \Leftrightarrow x - 4 = 2y \quad | :2$

$\Leftrightarrow y = \frac{1}{2}x - 2$

a) $k = \frac{1}{2}$

suora: $y - 3 = \frac{1}{2}(x - 1)$

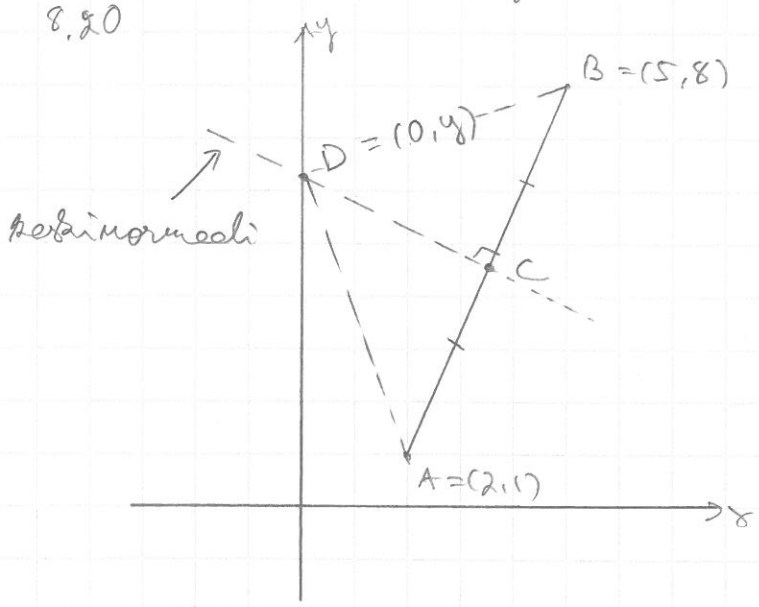
$\Leftrightarrow y = \frac{1}{2}x + \frac{5}{2} \quad | \cdot 2$

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

b) $k_1 \cdot k_2 = -1 \Leftrightarrow k_2 = -\frac{1}{k_1} = -\frac{1}{\frac{1}{2}} = -2$

normaali: $y - 3 = -2(x - 1) \Leftrightarrow y = -2x + 5$

8.20



janan AB keskipiste:

$C = \left(\frac{2+5}{2}, \frac{1+8}{2}\right) = \left(\frac{7}{2}, \frac{9}{2}\right)$

$k_{AB} = \frac{\Delta y}{\Delta x} = \frac{8-1}{5-2} = \frac{7}{3}$

$k_{AB} \cdot k_2 = -1 \Leftrightarrow k_2 = -\frac{1}{k_{AB}} = -\frac{1}{\frac{7}{3}} = -\frac{3}{7}$

korkeusnormaali:

$y - \frac{9}{2} = -\frac{3}{7}\left(x - \frac{7}{2}\right)$

$\Leftrightarrow y = -\frac{3}{7}x + 6$

$x = 0: \quad y = -\frac{3}{7} \cdot 0 + 6 = 6 \Rightarrow D = (0,6)$

TAI: $|DA| = |DB|$

$\Leftrightarrow \sqrt{(0-2)^2 + (y-1)^2} = \sqrt{(0-5)^2 + (y-8)^2} \quad | ()^2$ mol. puol. ≥ 0

$\Leftrightarrow 4 + (y-1)^2 = 25 + (y-8)^2$

$\Leftrightarrow 4 + y^2 - 2y + 1 = 25 + y^2 - 16y + 64$

$\Leftrightarrow 14y = 84 \quad | :14 \Leftrightarrow y = 6 \Rightarrow D = (0,6)$