

$$118.) \quad 2y - 3x = 4 \quad (y+3) = -\frac{1}{3}(x-1) \quad 1\frac{1}{2}x + 2 = -\frac{1}{3}x - \frac{2}{3}$$

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

$$\sqrt{(1+2)^2 + (-3+1)^2} = \sqrt{3^2 + 4^2} = \underline{\underline{5}}$$

$$1\frac{3}{6}x = -4\frac{1}{3} \quad x = -\frac{13}{3} \cdot \frac{6}{13} = -\underline{\underline{2}}$$

$$y = \underline{\underline{-1}}$$

$$119.) \quad 3x + 2y = 7$$

$$y = -1.5x + 3.5$$

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

$$y = \frac{2}{3}x + 2\frac{2}{3}$$

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

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

$$5\frac{1}{6} = 2\frac{1}{6}x$$

$$5 = 13x$$

$$x = \underline{\underline{5\frac{1}{13}}}$$

$$y = \underline{\underline{2\frac{12}{13}}}$$

$$\sqrt{(2 - 5\frac{1}{13})^2 + (3 - 2\frac{12}{13})^2} =$$

$$= \sqrt{(\frac{21}{13})^2 + (\frac{1}{13})^2} = \frac{\sqrt{21^2 + 1}}{13} =$$

$$120.) \quad \frac{-1+3}{6-2} = \frac{2}{4} = \frac{1}{2}$$

$$(y-4) = -2(x-1.5)$$

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

$$y = \underline{\underline{-2x + 7}}$$

$$y = \underline{\underline{-\frac{9}{5}}}$$

$$y = \underline{\underline{\frac{1}{2}x - 4}}$$

$$-2y + 7 = \frac{1}{2}x - 4$$

$$11 = 2\frac{1}{2}x$$

$$x = \underline{\underline{2\frac{2}{5}}}$$

$$\sqrt{(1.5 - 2\frac{2}{5})^2 + (4 + \frac{9}{5})^2} = \frac{\sqrt{(-14.5)^2 + (29)^2}}{5} =$$

$$26.) \quad 3y = -5\frac{1}{3}x + 4$$

$$-5\frac{1}{3}x + 4 = \frac{3}{5}x + (\sqrt{3} - \frac{3}{5})K$$

$$(y - K\sqrt{3}) = \frac{3}{5}(x - K)$$

$$4 + (\frac{3}{5} - \sqrt{3})K = \frac{34}{15}x$$

$$y - K\sqrt{3} = \frac{3}{5}x - \frac{3}{5}K$$

$$y = \frac{3}{5}x + (\sqrt{3} - \frac{3}{5})K$$

$$x = \frac{15(4 + (\frac{3}{5} - \sqrt{3})K)}{34}$$

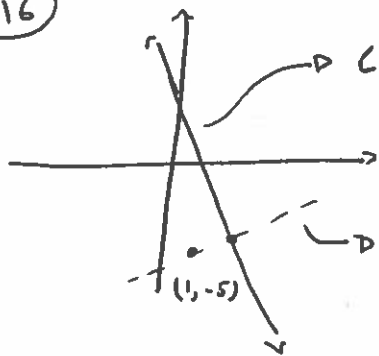
$$y = -\frac{25(4 + (\frac{3}{5} - \sqrt{3})K)}{34} + 4$$

$$\left(\frac{15(4 + (\frac{3}{5} - \sqrt{3})K)}{34} - K\right)^2 + \left(-\frac{25(4 + (\frac{3}{5} - \sqrt{3})K)}{34} + 4 - K\sqrt{3}\right)^2 = 4^2$$

$$(60 + (9 - 15\sqrt{3})K - 34K)^2 + (-100 + (15 - 25\sqrt{3})K + 136 - 34K\sqrt{3})^2 = (434)^2$$

# Chapter 21

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$$L: 3x + y - 4 = 0$$

$$y = -3x + 4$$

$$(y+5) = -1/3 (x-1)$$

$$y+5 = -1/3 x - 1/3$$

$$y = -1/3 x - 5 1/3 \quad \textcircled{1} \text{ perp. line}$$

$$\begin{cases} y = -3x + 4 \\ y = -1/3 x - 5 1/3 \end{cases}$$

$$-3x + 4 = -1/3 x - 5 1/3$$

$$-9x + 12 = -x - 16$$

$$28 = 10x$$

$$x = 2.8$$

$\textcircled{2}$  point of intersection

$$y = -3 \cdot 2.8 + 4$$

$$y = -4.4$$

$$\sqrt{(1-2.8)^2 + (-5-4.4)^2} =$$

$$= \sqrt{1.8^2 + 9.4^2} \approx 9.57 \quad \textcircled{3} \text{ distance}$$

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$$e: 2x + 3y = 6$$

$$3y = -2x + 6$$

$$y = -2/3 x + 2$$

$$(y-4) = 3/2 (x-1.5)$$

$$y-4 = 3/2 x - 4.5/2$$

$$y = 3/2 x + 1 3/4$$

$$\begin{cases} y = -2/3 x + 2 \\ y = 3/2 x + 1 3/4 \end{cases}$$

$$\sqrt{(1.5 - 3/2)^2 + (4 - 1 3/4)^2} \approx$$

$$-2/3 x + 2 = 3/2 x + 1 3/4$$

$$\approx \boxed{2.496}$$

$$-4x + 12 = 9x + 6 18/4$$

$$13x = 1 1/2$$

$$x = \underline{\underline{3/26}}$$

$$y = -2/26 + 2 = \underline{\underline{1 12/13}}$$