

$$\textcircled{1} \quad \frac{3}{4} |5 - 6x| + 7 = 10$$

$$\frac{3}{4} |5 - 6x| = 3$$

$$|5 - 6x| = 3 \cdot \frac{4}{3}$$

$$|5 - 6x| = 4$$

$$5 - 6x = 4 \quad \text{or} \quad 5 - 6x = -4$$

$$-6x = -1 \quad \quad -6x = -9$$

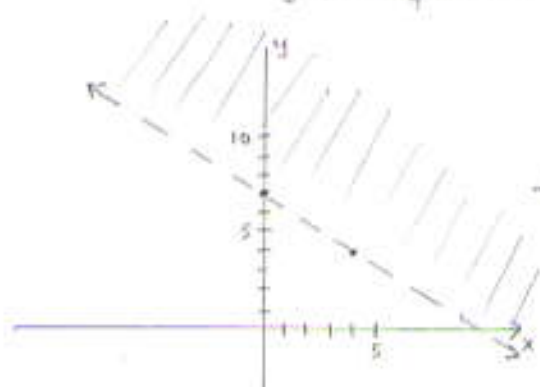
$$x = \frac{1}{6} \quad \quad x = \frac{3}{2}$$

$$\left\{ \frac{1}{6}, \frac{3}{2} \right\}$$

$$\textcircled{2} \quad -6x - 8y < -56$$

$$-8y < 6x - 56$$

$$y > -\frac{3}{4}x + 7$$



Test: (0, 0)

$$-6(0) - 8(0) < -56$$

$$0 < -56$$

False

$$\textcircled{4} \quad -3(-4 - 5x) < 6x \quad \text{Union} \quad \text{or} \quad 7 - 8x \geq 9(10x + 11)$$

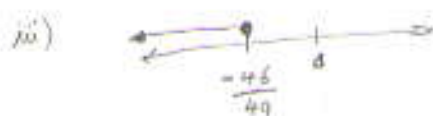
$$12 + 15x < 6x \quad \quad 7 - 8x \geq 90x + 99$$

$$12 < -9x \quad \quad -92 \geq 98x$$

$$-\frac{4}{3} > x \quad \quad -\frac{46}{49} \geq x$$

$$\text{i) } (-\infty, -\frac{46}{49}]$$

$$\text{ii) } \left\{ x \mid x \leq -\frac{46}{49} \right\}$$



	x	y
y-intercept	0	6
x-intercept	7	0

$$7(0) = 42 - 6x$$

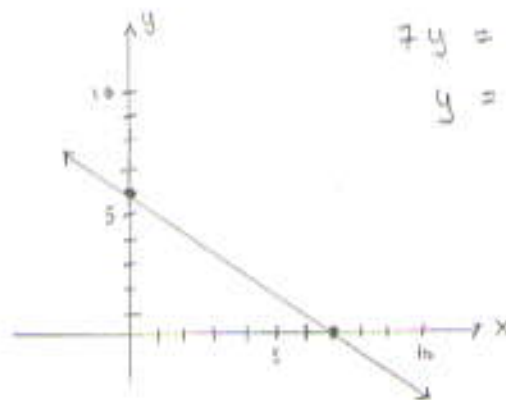
$$6x = 42$$

$$x = 7$$

$$7y = 42 - 6(0)$$

$$7y = 42$$

$$y = 6$$



$$\textcircled{6} \quad m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{-2 - (-1)}{\frac{3}{2} - \frac{3}{4}}$$

$$= \frac{-2 + 1}{\frac{3}{2} - \frac{3}{4}}$$

$$= \frac{-24 + 12}{8 - 9}$$

$$= \frac{-12}{-1}$$

$$= 12$$

$$m = 12, \left(\frac{3}{4}, -1\right)$$

$$y - y_1 = m(x - x_1)$$

$$y - (-1) = 12\left(x - \frac{3}{4}\right)$$

$$y + 1 = 12x - 9$$

$$y = 12x - 10 //$$

$$\textcircled{3} \quad 13x + 39y = 57$$

$$39y = -13x + 57$$

$$y = -\frac{1}{3}x + \frac{57}{39}$$

$$m = -\frac{1}{3}$$

$$y - y_1 = m(x - x_1)$$

$$y - 3 = -\frac{1}{3}(x - (-4))$$

$$y - 3 = -\frac{1}{3}x - \frac{4}{3}$$

$$3y - 9 = -x - 4$$

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

$$\textcircled{7} \quad \frac{a}{b} + c = d$$

$$a + bc = bd$$

$$a = bd - bc$$

$$a = b(d - c)$$

$$\frac{a}{d - c} = b //$$

$$\textcircled{8} \quad -4|-5 - 6x| + 7 \geq -9$$

$$-4|-5 - 6x| \geq -16$$

$$|-5 - 6x| \leq 4$$

$$-5 - 6x \leq 4 \quad \text{and} \quad -5 - 6x \geq -4$$

$$-6x \leq 9$$

$$x \geq -\frac{3}{2}$$

$$-6x \geq -1$$

$$x \leq -\frac{1}{6}$$

$$\left[-\frac{3}{2}, -\frac{1}{6}\right]$$

$$\textcircled{9} \quad 2x - \frac{4}{3}y = \frac{4}{3}$$

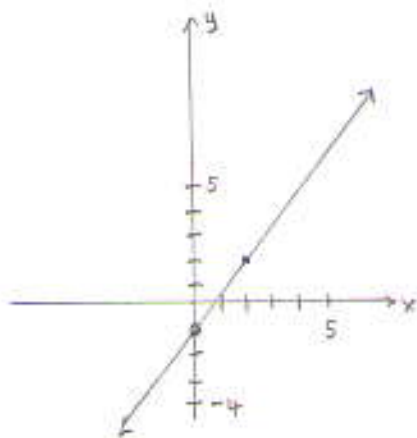
$$6x - 4y = 4$$

$$-4y = -6x + 4$$

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

i) $m = \frac{3}{2}$; y-intercept: $(0, -1)$

ii)



$$\textcircled{10} \quad \left|\frac{1}{2} + \frac{3}{4}x\right| = \left|\frac{5}{6}x - \frac{7}{8}\right|$$

$$\frac{1}{2} + \frac{3}{4}x = \frac{5}{6}x - \frac{7}{8} \quad \text{or} \quad \frac{1}{2} + \frac{3}{4}x = -\left(\frac{5}{6}x - \frac{7}{8}\right)$$

$$12 + 18x = 20x - 21$$

$$33 = 2x$$

$$\frac{33}{2} = x$$

$$\frac{1}{2} + \frac{3}{4}x = -\frac{5}{6}x + \frac{7}{8}$$

$$12 + 18x = -20x + 21$$

$$38x = 9$$

$$x = \frac{9}{38}$$

$$\left\{\frac{9}{38}, \frac{33}{2}\right\}$$

$$\textcircled{11} \quad 4x - 7 < 3x - 5 \quad \text{intersection} \quad \text{and} \quad -11 - x > 4x + 4$$

$$x < 2$$

$$-15 > 5x$$

$$-3 > x$$

i) $(-\infty, -3)$



$$\textcircled{12} \quad -\frac{7}{11} \left| \frac{8}{11} + \frac{9}{11}x \right| - \frac{10}{11} < \frac{12}{11}$$

$$-\frac{7}{11} \left| \frac{8}{11} + \frac{9}{11}x \right| < \frac{22}{11}$$

$$\left| \frac{8}{11} + \frac{9}{11}x \right| > \frac{22}{11} \cdot -\frac{11}{7}$$

$$\left| \frac{8}{11} + \frac{9}{11}x \right| > -\frac{22}{7}$$

$$(-\infty, \infty) //$$