

Segunda

$$\textcircled{1} \quad \left. \begin{array}{l} x+y=1 \\ 2x^2-y^2=2 \end{array} \right\} \begin{array}{l} x=1-y \\ 2(1-y)^2-y^2=2 \\ 2(1+y^2-2y)-y^2=2 \end{array}$$

$$2+2y^2-4y-y^2=2 \rightarrow y^2-4y+2-2=0$$

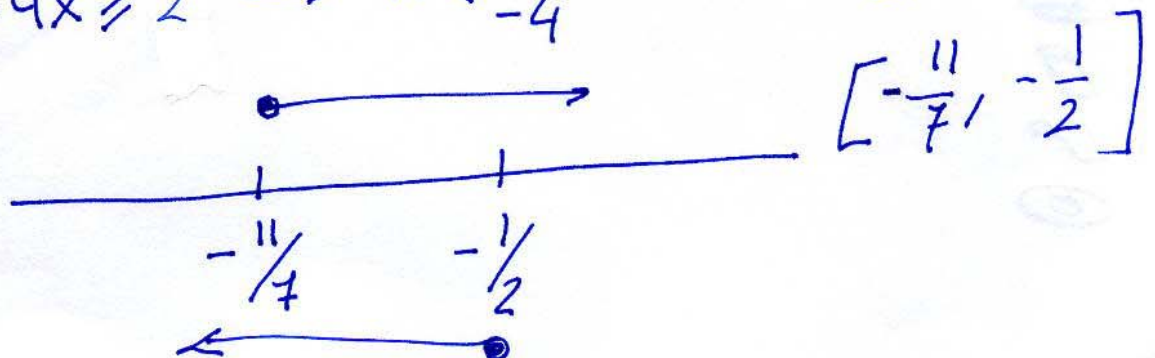
$$y^2-4y=0 \quad y(y-4)=0 \rightarrow \begin{array}{l} \boxed{y=0} \\ y-4=0 \quad \boxed{y=4} \end{array}$$

$y=0$	$x=1-0$	$x=1$
$y=4$	$x=1-4$	$x=-3$

$$\textcircled{2} \quad \left. \begin{array}{l} \frac{x-1}{3} - \frac{x+3}{2} \leq x \\ \frac{4x-2}{4} - \frac{x-1}{3} \geq x \end{array} \right\} \begin{array}{l} \frac{2x-2-3x-9}{\cancel{6}} \leq \frac{6x}{\cancel{6}} \\ \frac{12x-6-4x+4}{\cancel{12}} \geq \frac{12x}{\cancel{12}} \end{array}$$

$$\begin{array}{l} 2x-3x-6x \leq +9+2 \\ -7x \leq 11 \quad x \geq -\frac{11}{7} \end{array}$$

$$\begin{array}{l} \cancel{12x}-\cancel{12x}-4x \geq 6-4 \\ -4x \geq 2 \rightarrow x \leq \frac{2}{-4} \quad x \leq -\frac{1}{2} \end{array}$$



$$\textcircled{4} \left. \begin{array}{l} \log(x^2 \cdot y) = 2 \\ \log\left(\frac{x}{y^2}\right) = 1 \end{array} \right\} \begin{array}{l} \log(x^2 \cdot y) = \log 100 \\ \log \frac{x}{y^2} = \log 10 \end{array}$$

$$x^2 \cdot y = 100 \quad (10y^2)^2 \cdot y = 100 \quad 100y^4 \cdot y = 100$$

$$\frac{x}{y^2} = 10 \rightarrow x = 10y^2 \quad 100y^5 = 100 \quad y^5 = 1$$

$$x = 10 \cdot 1^2 = 10$$

$$\boxed{\begin{array}{l} y = 1 \\ x = 10 \end{array}}$$

$$\textcircled{5} \log(3x+7) = 2 \log(x+1) - \log(2x-5)$$

$$\log(3x+7) = \log(x+1)^2 - \log(2x-5)$$

$$\log(3x+7) = \log \frac{(x+1)^2}{(2x-5)} \rightarrow (3x+7) = \frac{(x+1)^2}{(2x-5)}$$

$$(3x+7)(2x-5) = (x+1)^2$$

$$6x^2 - 15x + 14x - 35 = x^2 + 1 + 2x$$

$$6x^2 - x^2 - 15x + 14x - 2x - 35 - 1 = 0$$

$$5x^2 - 3x - 36 = 0$$

$$x = \frac{3 \pm \sqrt{9 - 4 \cdot 5 \cdot (-36)}}{2 \cdot 5} = \frac{3 \pm \sqrt{729}}{10} = \frac{3 \pm 27}{10}$$

$$x_1 = \frac{3+27}{10} = 3$$

$$x_2 = \frac{3-27}{10} = \frac{-24}{10}$$

$$\downarrow \\ -\frac{12}{5}$$

$$\textcircled{7} \begin{cases} 3x - 4y - 2z = 2 \\ x + 5y + 3z = 5 \rightarrow x = 5 - 5y - 3z \\ 2x + y - z = 11 \end{cases}$$

$$3(5 - 5y - 3z) - 4y - 2z = 2$$

$$2(5 - 5y - 3z) + y - z = 11$$

$$15 - 15y - 9z - 4y - 2z = 2$$

$$10 - 10y - 6z + y - z = 11$$

$$\left. \begin{aligned} -19y - 11z &= 2 - 15 \\ -9y - 7z &= 11 - 10 \end{aligned} \right\}$$

$$\left. \begin{aligned} -19y - 11z &= -13 \\ -9y - 7z &= 1 \end{aligned} \right\}$$

$$-171y - 99z = -117$$

$$+171y + 133z = -19$$

$$\hline 34z = -136$$

$$z = \frac{-136}{34} = -4$$

$$-133y - 77z = -91$$

$$+99y + 77z = -11$$

$$\hline -34y = -102$$

$$y = \frac{-102}{-34} = +3$$

$$x = 5 - 5(3) - 3(-4) = 2$$

$$\boxed{x = 2}$$