

Day 8

$$1) x=0, y=\frac{5}{2}$$

$$\begin{cases} 5x+2y=1 \\ -3x+3y=5 \end{cases}$$

$$\begin{cases} 5 \cdot 0 + 2 \cdot \frac{5}{2} = 1 \\ -3 \cdot 0 + 3 \cdot \frac{5}{2} = 5 \end{cases}$$

$$\begin{cases} \frac{10}{2} = 1 \\ \frac{15}{2} = 5 \end{cases}$$

$$\begin{cases} 5=1 \\ 7,5=5 \end{cases}$$

$$2) x=1; y=3$$

$$\begin{cases} 2x-y=-1 \\ 3x+y=6 \end{cases}$$

$$\begin{cases} 2 \cdot 1 - 3 = -1 \\ 3 \cdot 1 + 3 = 6 \end{cases}$$

$$\begin{cases} 2-3=-1 \checkmark \\ 3+3=6 \checkmark \end{cases}$$

$$3) x=2; y=3$$

$$\begin{cases} 3x-4y=-6 \\ 2x+4y=16 \end{cases}$$

$$\begin{cases} 3 \cdot 2 - 4 \cdot 3 = -6 \\ 2 \cdot 2 + 4 \cdot 3 = 16 \end{cases}$$

$$\begin{cases} 6-12=-6 \\ 4+12=16 \end{cases}$$

$$4) x=1; y=1$$

$$\begin{cases} x+y=1 \\ 2x+2y=2 \end{cases}$$

$$\begin{cases} 1+1=1 \quad \times \\ 2 \cdot 1 + 2 \cdot 1 = 2 \quad \times \end{cases}$$

$$5) x+y=3 \quad | \quad x=3 \quad y=1$$

$$2x+2y=2$$

$$\begin{cases} 3+1=3 \\ 2 \cdot 3 + 2 \cdot 1 = 2 \end{cases}$$

$$\begin{cases} 4=3 \\ 6+2=2 \end{cases}$$

$$6) \begin{cases} y-2x=1 \\ 6x-3y=-3 \end{cases}$$

$$\begin{cases} 0-2 \cdot 0=1 \quad (0;0) \\ 6 \cdot 0 - 3 \cdot 0 = -3 \end{cases}$$

$$\begin{cases} 0=1 \\ 0=-3 \quad \times \end{cases}$$

$$\begin{cases} 1-2 \cdot 1=1 \quad (1;1) \\ 6 \cdot 1 - 3 \cdot 1 = -3 \end{cases}$$

$$\begin{cases} -1=1 \\ 3=-3 \quad \times \end{cases}$$

$$(1;3) \begin{cases} 3-2 \cdot 1=1 \\ 6 \cdot 1 - 3 \cdot 3 = -3 \end{cases} \quad \begin{cases} -1-2 \cdot (-1)=1 \quad (-1;1) \\ 6 \cdot (-1) - 3 \cdot (-1) = -3 \end{cases}$$

$$\begin{cases} 1=1 \\ 6-9=-3 \end{cases} \quad \begin{cases} -4=1 \\ -6+3=-3 \quad \checkmark \end{cases}$$

$$8) \begin{cases} 4x+y=4 \\ 3x+\frac{1}{2}y=2 \end{cases} \quad \begin{cases} y=4-4x \\ \frac{1}{2}y=2-3x \end{cases}$$

$$10) \begin{cases} -10x-5y=0 \\ 21x-7y=28 \end{cases} \quad \left(\frac{5}{4}; -\frac{5}{8}\right)$$

$$\begin{cases} -10 \cdot \frac{5}{4} - 5 \cdot \left(-\frac{5}{8}\right) \\ 21 \cdot \frac{5}{4} - 7 \cdot \left(-\frac{5}{8}\right) \end{cases} \quad \begin{cases} -10 \cdot \frac{4}{5} - 5 \cdot \left(-\frac{8}{5}\right) \\ 21 \cdot \frac{4}{5} - 7 \cdot \left(-\frac{8}{5}\right) \end{cases}$$

$$\begin{cases} -\frac{50}{4} + \frac{5 \cdot 5}{8} \\ -\frac{50}{4} + \frac{40}{8} \end{cases} \quad \begin{cases} -\frac{40}{5} - \frac{40}{5} = -\frac{80}{5} \quad \times \\ -\frac{10}{5} + \frac{40}{5} = 0 \end{cases}$$

$$\begin{cases} -\frac{100}{8} + \frac{40}{8} \\ -\frac{240}{8} + \frac{35}{8} \end{cases} \quad \begin{cases} -\frac{40}{5} + \frac{40}{5} = 0 \\ \frac{24}{5} + \frac{56}{5} = 28 \quad \checkmark \end{cases}$$

$$\begin{cases} -\frac{60}{8} = \frac{15}{2} = -7,5 \\ -\frac{175}{8} = -21,875 \end{cases}$$

$$12) \begin{cases} 5x - \frac{1}{2}y = -1 \\ 3x - 2y = 1 \end{cases} \quad \text{Laplace } x = -\frac{5}{12}, y = \frac{16}{12}$$

$$\begin{cases} 5 \cdot \frac{5}{12} - \frac{1}{2} \cdot \frac{16}{12} \\ 3 \cdot \frac{5}{12} - 2 \cdot \frac{16}{12} \end{cases}$$

$$\begin{cases} \frac{25}{12} - \frac{16}{24} \\ \frac{15}{12} - \frac{32}{12} \end{cases}$$

$$\begin{cases} \frac{50-16}{24} \\ \frac{15-32}{12} \end{cases}$$

$$\begin{cases} \frac{34}{24} = 1 \quad \times \\ -\frac{17}{12} = -1 \end{cases}$$

$$15) \begin{cases} 2x+3y=-1 \\ 3x+4y=0 \end{cases} \quad x=4; y=3$$

$$19) \begin{cases} 2x = x+6 \\ 2x-x=-6 \\ x=6 \\ 2 \cdot 6 = 12 \\ 6+6=12 \end{cases} \quad \begin{cases} x=2y \\ x-6=y+6 \\ 2y-6=y+6 \\ 2y-6-y-6 \end{cases}$$

$$\begin{cases} y=12 \\ x=2 \cdot 12=24 \end{cases}$$