

01.12.22

2.5.19

$$d) \begin{cases} 2x - 4y = 2 \\ x - 2y = 1 \end{cases}$$

$$e) \begin{cases} 2x + 4y = 5 \\ x + 2y = 2 \end{cases} \quad | \div 2$$

$$d) \Delta = \begin{vmatrix} 2 & -4 \\ 1 & -2 \end{vmatrix} = -4 - (-4) = 0$$

$$d) \begin{cases} 2x - 4y = 2 \\ x - 2y = 1 \end{cases} \quad | \div 2$$

$$\Leftrightarrow x - 2y = 1 \quad \Leftrightarrow x = 2y + 1$$

$$S = \left\{ (x, y) \in \mathbb{R}^2 \mid x - 2y = 1 \right\}$$

$$= \left\{ (2y + 1, y) \mid y \in \mathbb{R} \right\}$$

$$e) \begin{cases} x + 2y = 2,5 \\ x + 2y = 2 \end{cases}$$

deux droites parallèles

$$S = \emptyset$$

2.5.21

$$j) \begin{cases} x + y + z = 25 \\ x - y + z = 5 \\ x + 2z = 2y - 10 \end{cases}$$

$$\Leftrightarrow \begin{cases} x + y + z = 25 \\ x - y + z = 5 \\ x - 2y + 2z = -10 \end{cases} \begin{array}{l} \times \\ \cdot 1 \\ \cdot (-1) \end{array}$$

$$\Leftrightarrow \begin{cases} 2y = 20 \\ x + z = 25 - y \\ x + 2z = 2y - 10 \end{cases}$$

$$\Leftrightarrow \begin{cases} y = 10 \\ x + z = 15 \\ x + 2z = 10 \end{cases}$$

$$\Leftrightarrow \begin{cases} y = 10 \\ x = 20 \\ z = -5 \end{cases}$$

$$S = \left\{ (20; 10; -5) \right\}$$

$$k) \begin{cases} x - y - z = 6 \\ x - 2y - 3z = 10 \\ 5x + 6y + z = 2 \end{cases} \quad \left| \begin{array}{c} y \\ \cdot 2 \\ \cdot (-1) \end{array} \right| \quad \begin{array}{c} y \\ \cdot 3 \\ \cdot 1 \end{array}$$

$$\Leftrightarrow \begin{cases} x + z = 2 \\ 8x - 8z = 32 \\ x - y - z = 6 \end{cases} \quad \left| \begin{array}{c} \div 8 \end{array} \right.$$

$$\Leftrightarrow \begin{cases} x + z = 2 \\ x - z = 4 \\ x - y - z = 6 \end{cases} \quad \left| \begin{array}{c} z \\ \cdot 1 \\ \cdot 1 \end{array} \right.$$

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

$$S = \{ (3; -2; -1) \}$$