

## 二元联立方程式



Note 1 [请观看视频并把重点记录下来]

$$1. \begin{cases} x + y = 4 \\ xy = 2 \end{cases}$$

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

## 三元一次联立方程式

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

$$4. \begin{cases} \frac{3}{x} - \frac{1}{y} + \frac{2}{z} = 0 \\ \frac{2}{x} + \frac{1}{y} - \frac{4}{z} = -9 \\ \frac{1}{x} + \frac{1}{y} + \frac{3}{z} = 6 \end{cases}$$

$$5. \begin{cases} \frac{3}{x+1} - \frac{1}{y+2} + \frac{1}{z-1} = 2 \\ \frac{2}{x+1} - \frac{3}{y+2} - \frac{1}{z-1} = 7 \\ \frac{1}{x+1} + \frac{1}{y+2} - \frac{4}{z-1} = 8 \end{cases}$$

$$6. \begin{cases} x + y = 12 \\ y + z = 8 \\ z + x = 10 \end{cases}$$



多个别人一点鼓励吧!





## Tutorial 1

$$1. \begin{cases} 3x + 4y = 24 \\ xy = 12 \end{cases}$$

[Ans :  $x = 4, y = 3$ ]

$$2. \begin{cases} x + 2y = 5 \\ 5x^2 + 4y^2 + 12x = 29 \end{cases}$$

[Ans :  $x = -1, y = 3$  或  $x = \frac{2}{3}, y = \frac{13}{6}$ ]

$$3. \begin{cases} 2x + y = 7 \\ x^2 - xy + y^2 = 7 \end{cases}$$

[Ans :  $x = 2, y = 3$  或  $x = 3, y = 1$ ]

$$4. \begin{cases} 2x + 3y = 7 \\ x^2 + xy + y^2 = 7 \end{cases}$$

[Ans :  $x = -1, y = 3$  或  $x = 2, y = 1$ ]

$$5. \begin{cases} 4x - 3y + 2 = 0 \\ 2y + 5z - 19 = 0 \\ 5x - 7z + 16 = 0 \end{cases}$$

[Ans :  $x = 1, y = 2, z = 3$ ]

$$6. \begin{cases} x + y + z = 9 \\ 3x + y - 2z = 1 \\ x - 2y + z = 0 \end{cases}$$

[Ans :  $x = 2, y = 3, z = 4$ ]

$$7. \begin{cases} 2x - 3y - z = 4 \\ 4x + y + 2z = 3 \\ x - 4y - 3z = 2 \end{cases}$$

[Ans :  $x = \frac{1}{3}, y = \frac{-5}{3}, z = \frac{5}{3}$ ]

MathTalk





## Tutorial 2

1. 已知  $2x + y = x - 3y + 15 = 16$  , 求  $x^2 + xy - y^2$  的值。 [ Ans : E ]

A 2

B 7

C 49

D 53

E 59

2. 求两圆 circle  $x^2 + y^2 = 6$  与  $x^2 + y^2 - 6x + 8 = 0$  的交点 intersection point。 [ Ans : E ]

A  $(-1, 3), (-1, -3)$ B  $(\sqrt{2}, 2), (\sqrt{2}, -2)$ C  $(\frac{7}{3}, \sqrt{5}), (\frac{7}{3}, -\sqrt{5})$ D  $(-\frac{7}{3}, \sqrt{2}), (-\frac{7}{3}, -\sqrt{2})$ E  $(\frac{7}{3}, \frac{\sqrt{5}}{3}), (\frac{7}{3}, -\frac{\sqrt{5}}{3})$ 

3. 解方程式组 solve the equation  $\begin{cases} xy + y = 4 \\ x + y = 4 \end{cases}$  [ Ans :  $y = 4, x = 0$  ]

4. 解方程式组  $\begin{cases} x^2 + y^2 = 2 \\ x^2 - y^2 + 3x + 3y = 0 \end{cases}$  , 式中  $x$  与  $y$  都是实数 Real Number 。

[ Ans :  $\begin{cases} x = 1, y = -1 \\ x = -1, y = 1 \end{cases}$  ]

5. 解方程式组 solve the equation  $\begin{cases} \frac{3}{x-2} + \frac{4}{y+1} = 1 \\ x - y = 1 \end{cases}$  [ Ans :  $\begin{cases} x = 1, y = 0 \\ x = 8, y = 7 \end{cases}$  ]

6. 解方程式组 solve the equation  $\begin{cases} \frac{2}{3x} + \frac{3}{4y} = 0 \\ \frac{4}{x} - \frac{3}{2y} = 6 \end{cases}$  [ Ans :  $x = \frac{8}{9}, y = -1$  ]

7. 解方程式 solve the equation  $\begin{cases} x + y = 12 \\ y + z = 8 \\ z + x = 10 \end{cases}$  [ Ans :  $x = 7, y = 5, z = 3$  ]

