

$$\begin{aligned}
 x^2 - 5x - 14 = 0 &\rightarrow x^2 - 5x - 14 \Rightarrow (x-7)(x+2) \Rightarrow x_1 = 7, x_2 = -2 \\
 x^2 - 11x + 10 = 0 &\rightarrow x^2 - 11x + 10 \Rightarrow (x-1)(x-10) \Rightarrow x_1 = 1, x_2 = 10 \\
 x^2 - 6x + 8 = 0 &\rightarrow x^2 - 6x + 8 \Rightarrow (x-2)(x-4) \Rightarrow x_1 = 2, x_2 = 4 \\
 x^2 - 8x + 15 = 0 &\rightarrow x^2 - 8x + 15 \Rightarrow (x-3)(x-5) \Rightarrow x_1 = 3, x_2 = 5
 \end{aligned}$$

$$\begin{aligned}
 x^2 - 5x - 14 = 0 &\rightarrow (x-7)(x+2) \rightarrow x_1 = 7, x_2 = -2 \\
 x^2 + 5x + 6 = 0 &\rightarrow x^2 + 5x + 6 \rightarrow (x+2)(x+3) \rightarrow x_1 = -2, x_2 = -3 \\
 x^2 + 2x + 1 = 0 &\rightarrow \Delta, b^2 - 4ac = 4 - 4(1)(1) = 0 \rightarrow x_1 = x_2 = -1 \\
 x^2 + 3x + 2 = 0 &\rightarrow \Delta, b^2 - 4ac = 9 - 4(1)(2) = 1 \rightarrow x_1 = -1, x_2 = -2 \\
 x^2 - 9x + 14 = 0 &\rightarrow \Delta, b^2 - 4ac = 81 - 4(1)(14) = 25 \rightarrow x_1 = 2, x_2 = 7
 \end{aligned}$$

$$\begin{aligned}
 n(A) &= 3 \\
 n(B) &= 2 \\
 A \cap B &= 1 \\
 B \cap A &= 1
 \end{aligned}$$

$$\begin{aligned}
 f(x) &= 1 \rightarrow \{(1, 1), (2, 1), (-1, -1), (-2, -1), (-1, 4), (2, 1)\} \checkmark \\
 g(x) &= 1 \rightarrow \{(1, 1), (2, 1), (-1, 2), (-2, 2), (1, 4), (2, 4)\} \checkmark \\
 h(x) &= 1 \rightarrow \{(1, 1), (2, 1), (-1, 4), (2, 1), (-2, -1), (-1, 4)\} \checkmark \\
 i(x) &= 1 \rightarrow \{(1, 4), (2, 1), (2, 4), (1, 4), (-2, 2), (-1, 2)\} \checkmark
 \end{aligned}$$

$$x^2 - 10x + 16 = 0 \rightarrow x^2 - 10x + 16 \Rightarrow (x-2)(x-8) \rightarrow x_1 = 2, x_2 = 8$$

$$f(x) \rightarrow \{(1, 1), (1, 1), (1, 1)\} \checkmark$$

$$f(x) \rightarrow \{(1, 4), (1, 4), (1, 4)\} \checkmark$$

$$\left. \begin{array}{l} x^2 + 1 = a + b \xrightarrow{x=1} 1+1 = a+b \\ a+b=0 \text{ (I)} \\ x^2 + a + b \xrightarrow{x=1} 1+1 = a+b \\ a+b=1 \text{ (II)} \end{array} \right\} \begin{array}{l} a+b=0 \\ a+b=1 \end{array} \rightarrow \begin{array}{l} a=1 \\ b=-1 \end{array}$$

$$a \times b = 1 \times (-1) = -1$$

$$f(x) = x^2 - 2x$$

$$\omega x = V$$

$$x = \frac{V}{\omega} \rightarrow K = \frac{V}{\omega}$$

$$f(x) = \begin{cases} x^2 - 2x & x \geq \frac{V}{\omega} \\ x^2 & x \leq \frac{V}{\omega} \end{cases}$$

$$y^2 - 4 = x^2 - 4 \rightarrow y^2 - 4 = (x-2)(x+2) \xrightarrow{x=1} y^2 - 4 = 0 \rightarrow y = \pm 2$$

$$|x| + |y| = 2 \xrightarrow{x=1} |y| = 1 \rightarrow y = \pm 1$$

$$|y| = \sqrt{1 - \cos x} \xrightarrow{\cos x = 0} |y| = 1 \rightarrow y = \pm 1$$

$$\frac{y^2}{4} - \frac{(x-1)^2}{4} = 1 \rightarrow x$$

$$\sqrt{y} = x^2 + 2x + 2 \xrightarrow{\text{دو طرف مربع}} \sqrt{y} - 1 = x^2 + 2x + 1 \rightarrow \sqrt{y} - 1 = (x+1)^2$$

$$y_1 + y_2 = 0 \rightarrow y_1 = -y_2 \rightarrow (y_1 - y_2)(y_1^2 + y_1 y_2 + y_2^2) = 0 \rightarrow y_1 = y_2$$

$$x \sin y = y \sin x \rightarrow \sin x = 0 \rightarrow x = 0$$

$$\sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2 \xrightarrow{\text{دو طرف مربع}} x = y$$