

$$1) \quad x^2 - 5x - 9 = 0 \Rightarrow x^2 - 5x - 14 = 0 \quad (1)$$

$$(x-9)(x+4) = 0 \quad \text{جوابها: } 9, -4 \Rightarrow \frac{9}{1}, -\frac{4}{1}$$

$$2) \quad x^2 - 1x - 9 = 0 \Rightarrow x^2 - 1x - 1 = 0$$

$$(x-1)(x+1) = 0 \quad \text{جوابها: } 1, -1 \Rightarrow \frac{1}{1}, -\frac{1}{1}$$

$$3) \quad x^2 - 5x - 14 = 0 \Rightarrow x^2 - 5x - 14 = 0$$

$$(x-9)(x+4) = 0 \quad \text{جوابها: } 9, -4 \Rightarrow \frac{9}{1}, -\frac{4}{1}$$

$$4) \quad x^2 - 5x - 14 = 0 \Rightarrow x^2 - 5x - 14 = 0$$

$$(x-1)(x+1) = 0 \quad \text{جوابها: } 1, -1 \Rightarrow \frac{1}{1}, -\frac{1}{1}$$

$$الف) \quad x^2 - 5x - 14 = 0 \quad \text{جوابها: } (x-9)(x+4) = 0 \quad \text{جوابها: } 9, -4 \quad (2)$$

$$ب) \quad x^2 - 5x - 14 = 0 \quad \text{جوابها: } (x-9)(x+4) = 0 \quad \text{جوابها: } 9, -4$$

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$$د) \quad x^2 - 5x - 14 = 0 \quad \text{جوابها: } (x-9)(x+4) = 0 \quad \text{جوابها: } 9, -4$$

$$A = \{1, 2, 3\} \quad A \times B = \{(1, 1), (1, 2), (1, 3)\} \quad (3)$$

$$B = \{1, 2\} \quad \{(1, 1), (1, 2), (2, 1), (2, 2), (3, 1), (3, 2)\} = A \times B$$

$$\{(2, 1), (2, 2), (3, 1), (3, 2)\} = B$$

$$الف) \quad f(x) = \{(3, m), (2, 1), (-3, m), (-2, m), (3, m+1), (m, 4)\} \quad (4)$$

در این مثال، مقادیر m و n را در این مثال اول، به شرط تابع

در این مثال دوم، به شرط تابع

$$m^2 - m + 1 = m^2 - m - 1 = 0 \quad (m+1)(m-1) = 0 \quad \boxed{m = -1}$$

$$(2, 1) \neq (2, 4)$$

$$m' = m + 5 \quad m' - m - 5 = 0 \quad (m+5)(m+1) = 0$$

برای m زوج است $(-1, 4) \neq (-1, 3) \rightarrow X \rightarrow (1, 4) \neq (1, 3) \rightarrow$ برای m نام زوج است.

$$a^{\frac{1}{x}} = a^{\frac{1}{x}} \Rightarrow (a^{\frac{1}{x}})^x = (a^{\frac{1}{x}})^x \Rightarrow a = a$$

$$f(x) = \begin{cases} x^5 - 1 & x \geq 1 \\ ax + b & 1 < x < 5 \\ x^k & x \leq 1 \end{cases}$$

$x=1 \rightarrow x^5 - 1 = ax + b$ (4)
 $1 - 1 = a + b \Rightarrow a + b = 0 \quad \text{For } x=1$

$$f(x) = \begin{cases} Kx^{-\nu} & x \gg K \\ C - Px & x \ll K \end{cases} \quad \begin{aligned} \delta f &= \delta K \cdot x^{-\nu} - \delta \nu \cdot Kx^{-\nu} \\ \delta K &= \nu_0 K \cdot \frac{\nu}{\delta} \end{aligned} \quad (V)$$

x d) $y'' - 4y = x^5 - 5x + 1$ $x = 1 \pm i$ $y'' - 4y = 0$ $y = 0, +\sqrt{4}$
 $x^5 - 5x + 1 = 0$ $(x - \frac{1}{2})(x - \frac{1}{2})(x - \frac{1}{2}) = 0$ $y(y'' - 4) = 0$ $y = 0, +\sqrt{4}$

8. $|x| + |y| = 1$ $x=0 \Rightarrow y = \pm 1$ (singular)

$$X) |y| = \sqrt{1 - \cos \pi} = \sqrt{1 - (-1)} = \sqrt{2} \quad \text{المطلوع}$$

$$= \sqrt{1 - \cos \pi} = \sqrt{2}$$

$$1 - \cos \pi = 1$$

$$\cos \pi = -1$$

$$\Rightarrow y = \pm \sqrt{2}$$

$$Y) y^2 + x^2 + 2x + 1 = 0 \quad y^2 + (x+1)^2 = 0, \quad y=0, \quad x=-1 \quad \text{المطلوع}$$

$$Z) \sqrt[3]{y} + x^2 = 5 \quad \sqrt[3]{y} = -x^2 + 5 \quad \sqrt[3]{y} = \sqrt[3]{y} \quad (9)$$

$$\sqrt[3]{y} = -x^2 + 5$$

$$y_1 = y_2 = \dots$$

$$A) y'' + y = 0 \quad x$$

$$y_1'' + y_1 = 0 \quad x$$

$$y_1'' + y_1 = y_2'' + y_2$$

$$y_1'' + y_1 = 0 \quad x$$

$$y_1'' - y_2'' + y_1 - y_2 = 0$$

$$(y_1 - y_2)(y_1'' + y_1 + y_2'') + (y_1 - y_2) = 0$$

$$(y_1 - y_2)(y_1'' + y_1 + y_2'' + 2) = 0$$

$$\Delta = y_1'' - y_2'' - 1 = -y_2'' - 1$$

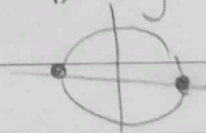
$$y_1 = y_2$$

$$\Delta = 0 \quad \Rightarrow y_1 = y_2$$

$$\text{المطلوع}$$

$$X) \pi \sin y = y \sin \pi \quad \pi \sin y = y \times 0 \quad \pi \sin y = 0 \quad \sin y = 0 \quad y = k\pi \quad k \in \mathbb{Z} \quad \text{المطلوع}$$

$$x = \pi \quad \sin \pi = 0$$



$$Y) \sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2 \quad \text{المطلوع} \quad |x=y|$$

$$\text{مثال: } x=2, y=2 \quad \sqrt{\frac{2}{2}} + \sqrt{\frac{2}{2}} = 1 + 1 = 2$$

$$\text{المطلوع}$$

$$\text{مثال: } x=1, y=4 \quad \sqrt{\frac{1}{4}} + \sqrt{\frac{4}{1}} = \frac{1}{2} + 2 \neq 2$$