

فرضه ای که

$$x^2 - 5x - 14 = 0$$

$$(x-7)(x+2) = 0$$

$$\hookrightarrow \frac{7}{-7} = \frac{2}{2} \quad \hookrightarrow \frac{-7}{-7} = \frac{-2}{2}$$

$$x^2 - 11x - 12 = 0$$

$$(x-12)(x+1) = 0$$

$$\hookrightarrow \frac{12}{-12} = \frac{1}{1} \quad \hookrightarrow \frac{-12}{-12} = \frac{-1}{1}$$

$$x^2 - 2x - 15 = 0$$

$$(x-6)(x+3) = 0$$

$$\hookrightarrow \frac{6}{-6} = \frac{3}{3} \quad \hookrightarrow \frac{-6}{-6} = \frac{-3}{3}$$

$$x^2 - 2x - 15 = 0$$

$$(x-6)(x+3) = 0$$

$$\hookrightarrow \frac{6}{-6} = \frac{3}{3} \quad \hookrightarrow \frac{-6}{-6} = \frac{-3}{3}$$

$$(x-5)(x+2) = 0$$

$$x^2 + 5x + 4 = 0 \quad \because a+c=b$$

$$(x+4)(x+1) = 0$$

$$\hookrightarrow \frac{-4}{-4} = \frac{-1}{-1} \quad \hookrightarrow \frac{-4}{-4} = \frac{-1}{-1}$$

$$\Delta = b^2 - 4ac = 5^2 - 12 = 13 > 0$$

دو حقیقی ریشه

$$3x^2 + 3x - 1 = 0$$

$$\Delta = 9 + 12 = 21$$

$$x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-3 \pm \sqrt{21}}{6}$$

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

$$B^T = \{(2,2), (2,3), (3,2), (3,3)\}$$

$$AB - B^T = \{(1,2), (1,3)\}$$

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

$$m = -1$$

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

$$m = 2 \rightarrow (2,2), (2,1) \quad \times$$

$$m = -1 \rightarrow (-1,2), (-1,1) \quad \times$$

میشه از این هم استفاده کرد

$$a^2 = 3a - 2 \quad a^2 - 3a + 2 = 0$$

$$(a-2)(a-1) = 0$$

$$\hookrightarrow \frac{2}{-2} = \frac{1}{1} \quad \hookrightarrow \frac{-2}{-2} = \frac{-1}{1}$$

$$a = 1 \rightarrow \{(1,1), (1,1), (1,2)\} \quad \times$$

$$a = 2 \rightarrow \{(1,2), (1,2), (2,2)\} \quad \checkmark$$

میشه از این هم استفاده کرد

4-

$$x=1 \rightarrow x^2-1=ax+b \rightarrow 0=a+b$$

$$x=2 \rightarrow x^2=ax+b \rightarrow 1=2a+b$$

$$\begin{array}{r} -(0=a+b) \\ \hline 1=a \\ b=-1 \end{array}$$

$$a \times b = -4$$

5)

$$2k-3=f-3k$$

$$5k = f$$

$$k = \frac{f}{5}$$

1)

1) $x=1 \rightarrow y^2(y-4)=0$

یا $y=0$ یا $y=4$

به ازای $x=1$ دو جواب دارد پس تابع

1)

2) $x=0 \rightarrow |y|=3$

$y = \pm 3$

تابع

1)

2) $x = 2k\pi + \frac{\pi}{2}$ $|y| \leq 1$

$y = \pm 1$

تابع

1)

2) $y^2 + (x+1)^2 = 0$

یا $y=0$ یا $x=-1$

$(-1, 0)$ نقطه

تابع

4-

1) $\sqrt[3]{y_1} + x^2 = 2n-2$

2) $\sqrt[3]{y_2} + x^2 = 2n-2$ $\sqrt[3]{y_1} = \sqrt[3]{y_2} \rightarrow y_1 = y_2$

تابع

4-

1) $y_1^2 + 2y_1 = 2ny_1^2 - y_2^2 = 2y_2 - 2y_1$

2) $y_2^2 + 2y_2 = 2ny_2^2 - y_1^2 = 2y_1 - 2y_2$

$(y_1 - y_2)(y_1^2 + y_1y_2 + y_2^2) = -2(y_1 - y_2)$

$(y_1 - y_2)(y_1^2 + y_1y_2 + y_2^2 + 2) = 0$

یا $y_1 = y_2$ یا $\Delta = -3y_2^2 - 8 < 0$

$y_1 = \frac{-y_2 \pm \sqrt{\Delta}}{2}$ $\Delta = y_2^2 - 2(y_2^2 + 2) = y_2^2 - 4y_2 - 4$

10-

1) $x = 2k\pi$ $y \sin x = x \sin y$

یا $x=0$ $y \sin 0 = 0 \sin y$

که y هر عددی باشد تابع

10-

1) $\sqrt{\frac{x}{y}} + \sqrt{\frac{y}{x}} = 2$

تابع

$t = \sqrt{\frac{x}{y}} > 0$

$t + \frac{1}{t} = 2$ $t + \frac{1}{t} \geq 2 \Rightarrow t = 1$ $\frac{x}{y} = 1$ $x = y$