

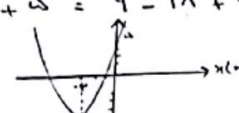
نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره کلاس دبیر
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الف) نوع دقتی استریم : $a > 0 \min$ (ب)

ext $\left\{ \begin{array}{l} \frac{-b}{r_a} \rightarrow x_1 = \frac{-b}{r_a} = -\frac{4}{2} = -2 \\ \frac{-\Delta}{r_a} \end{array} \right\}$

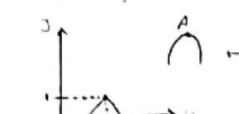
معادلات $\Rightarrow x_1 = \frac{-b}{r_a} = -2 \xrightarrow{x=2} (-2)^2 + (4 \times -2) + 5 = 4 - 8 + 5 = -1 \rightarrow [-1] \rightarrow \left[\begin{array}{l} -2 \\ -1 \end{array} \right]$

ب) رسم دقتی $\left[\begin{array}{l} -2 \\ -1 \end{array} \right] \leftarrow$ (ب)

$y = x^2 + 4x + 5$ 

الف) معادلات $\Rightarrow x_1 = \frac{-b}{r_a} = -2 \xrightarrow{x=2} (-2)^2 + (4 \times 2) - 3 \rightarrow 1 \rightarrow [1] \rightarrow \left[\begin{array}{l} 2 \\ 1 \end{array} \right]$

ب) رسم دقتی $\left[\begin{array}{l} 2 \\ 1 \end{array} \right] \leftarrow$ (ب)

$y = -x^2 + 4x - 3$ 

ب) $y = 0$ $\rightarrow x = 1, 3$

$\Delta = b^2 - 4ac \rightarrow \Delta = 16 - 12 = 4$
 $x = \frac{-b \pm \sqrt{\Delta}}{r_a} = \frac{-4 \pm 2}{-2} \rightarrow \left[\begin{array}{l} -1 \\ 3 \end{array} \right]$

$2x^2 - 3x + a = 0 \rightarrow$

ا) $\Delta > 0$ $\rightarrow \Delta = b^2 - 4ac \rightarrow \Delta = (-3)^2 - 4 \times 2 \times a \rightarrow 9 - 8a > 0 \rightarrow a < \frac{9}{8}$

ب) $\Delta = 0$ $\rightarrow \Delta = b^2 - 4ac \rightarrow \Delta = (-3)^2 - 4 \times 2 \times a \rightarrow 9 - 8a = 0 \rightarrow a = \frac{9}{8}$

ج) $\Delta < 0$ $\rightarrow \Delta = b^2 - 4ac \rightarrow \Delta = (-3)^2 - 4 \times 2 \times a \rightarrow 9 - 8a < 0 \rightarrow a > \frac{9}{8}$

د) $\Delta \geq 0$ $\rightarrow \Delta = b^2 - 4ac \rightarrow \Delta = (-3)^2 - 4 \times 2 \times a \rightarrow 9 - 8a \geq 0 \rightarrow a \leq \frac{9}{8}$ (تکلیف استریم)

ا) $x^2 - 2x - 1 = 0 \xrightarrow{+1} x^2 - 2x + 1 = 2 \rightarrow (x-1)^2 = 2 \rightarrow x-1 = \pm \sqrt{2} \rightarrow \left\{ \begin{array}{l} x-1 = \sqrt{2} \rightarrow x = \sqrt{2} + 1 \\ x-1 = -\sqrt{2} \rightarrow x = 1 - \sqrt{2} \end{array} \right.$

ب) $x^2 - x - 1 = 0 \xrightarrow{+\frac{1}{4}} x^2 - x + \frac{1}{4} = \frac{5}{4} \rightarrow (x - \frac{1}{2})^2 = \frac{5}{4} \rightarrow x - \frac{1}{2} = \pm \sqrt{\frac{5}{4}} \rightarrow \left\{ \begin{array}{l} x = \frac{1}{2} + \sqrt{\frac{5}{4}} \\ x = \frac{1}{2} - \sqrt{\frac{5}{4}} \end{array} \right.$

ا) $x^2 - 2x - 1 = 0 \rightarrow \Delta = b^2 - 4ac \rightarrow \Delta = (-2)^2 - 4 \times 1 \times (-1) = 4 + 4 = 8$

$x = \frac{-b \pm \sqrt{\Delta}}{r_a} \rightarrow \left\{ \begin{array}{l} x = \frac{2 \pm \sqrt{8}}{2} \rightarrow \left\{ \begin{array}{l} \frac{2 + 2\sqrt{2}}{2} = 1 + \sqrt{2} \\ \frac{2 - 2\sqrt{2}}{2} = 1 - \sqrt{2} \end{array} \right. \end{array} \right.$

ب) $x^2 + x - 4 = 0 \rightarrow \Delta = b^2 - 4ac \rightarrow \Delta = 1^2 - 4 \times 1 \times (-4) = 1 + 16 = 17$

$x = \frac{-b \pm \sqrt{\Delta}}{r_a} \rightarrow \left\{ \begin{array}{l} x = \frac{-1 \pm \sqrt{17}}{2} \end{array} \right.$

$$\text{الف) } x^2 - 11x + 18 = 0$$

$$(x-4)(x-5) = 0 \Rightarrow \begin{cases} x=4 \\ x=5 \end{cases}$$

$$\text{ب) } x^2 - 3x - 18 = 0$$

$$(x-6)(x+3) = 0 \Rightarrow \begin{cases} x=6 \\ x=-3 \end{cases}$$

3

4

$$\text{الف) } x^2 - 12x + 35 = 0$$

$$(x-5)(x-7) = 0 \Rightarrow \begin{cases} x=5 \\ x=7 \end{cases}$$

توضیح: در روش اولی ضرب x را با عدد a را در عدد b ضرب کرده و بجای c می نویسیم و خطی باقی از روش ها معادله را حل کرده (یعنی هر عدد از جمله مشترک یک گرفته) و باقیمانده را بر a تقسیم می کنیم

2

7

$$\text{ب) } x^2 - 10x + 21 = 0$$

$$(x-3)(x-7) = 0 \Rightarrow \begin{cases} x=3 \\ x=7 \end{cases}$$

$$\text{الف) } x^2 - 5x + 4 = 0 \Rightarrow (x-1)(x-4) = 0 \Rightarrow \begin{cases} x=1 \\ x=4 \end{cases}$$

$$\rightarrow \text{if } a+b=c \rightarrow -1, \frac{-c}{a} \Rightarrow \begin{cases} x=-1 \\ x=-\frac{c}{a} \end{cases}$$

$$\text{ج) } 2x^2 - 5x + 1 = 0 \Rightarrow \Delta = b^2 - 4ac$$

$$\Delta = (-5)^2 - 4 \times 2 \times 1 = 25 - 8 = 17$$

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

$$x = \frac{5 \pm \sqrt{17}}{4}$$

$$\text{د) } 4x^2 + 7x + 9 = 0 \Rightarrow \Delta = 49 - 4 \times 4 \times 9 = 49 - 144 = -95 < 0$$

3

1

$$S = -\frac{b}{a} \rightarrow S = -\frac{-5}{1} = 5$$

$$P = \frac{c}{a} \rightarrow P = \frac{1}{1} = 1$$

$$\text{الف) } S^2 - 2P \Rightarrow 5^2 - 2 \times 1 = 25 - 2 = 23$$

$$\text{ب) } S^2 - 2SP \Rightarrow 5^2 - 2 \times 5 \times 1 = 25 - 10 = 15$$

3

9

$$\text{الف) } \frac{1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8 \times 9 \times 10}{1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8 \times 9 \times 10} = 1 \rightarrow (1)$$

$$\frac{4 \times 1 \times 1^2}{1 \times 1 \times 1} = 4 \rightarrow (4) \Rightarrow 1 + 4 = 5$$

2

$$\text{ب) } \frac{1^2 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8 \times 9 \times 10}{1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8 \times 9 \times 10} = 1 \rightarrow (1)$$

$$\frac{1^2 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8 \times 9 \times 10}{1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8 \times 9 \times 10} = 1 \rightarrow (1) \Rightarrow 1 + 1 = 2$$

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