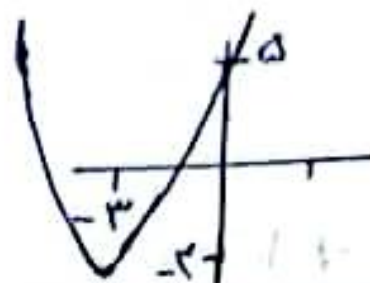


نام و نام خانوادگی ... (ارتشیا / میرزا) پاسخنامه تشریحی تکلیف شماره 1 ... کلاس ... (مهم)

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

$$9 + (-18) + 5 = -2$$

$$\text{Min} \begin{vmatrix} -3 \\ -2 \end{vmatrix}$$



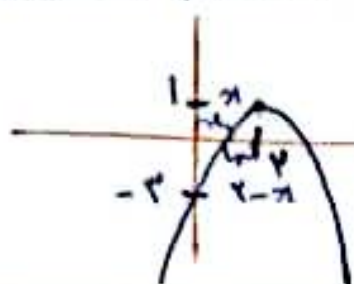
(الف)

(ب)

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

$$y = -4 + 8 - 3 = 1$$

$$\text{Max} \begin{vmatrix} 2 \\ 1 \end{vmatrix}$$



$$2 - x = 3x \Rightarrow 2 = 4x \Rightarrow x = 0.5$$

$$0.5 + 3 = 3.5$$

(ب) $\left[\frac{1}{5}\right]$ و $\left[\frac{3}{5}\right]$

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

$$\frac{9}{4} > a$$

$$\Delta = 0 \Rightarrow 9 - 4a = 0$$

$$\Delta = \text{منفی} \quad 9 - 4a < 0$$

$\Delta \Rightarrow$ مثبت باشد

$$\Leftrightarrow 9 > 4a$$

$$2 - 4a < 0 \Rightarrow 9 - 4a > 0 \quad \text{الف} \quad \text{Max } a = 1$$

$$9 - 4a = 0$$

$$9 = 4a \Rightarrow a = \frac{9}{4}$$

$$\text{ب) } \text{Max } a = 2$$

$$\text{ج) } a = 0$$

$$\text{الف) } x^2 - 2x - 1 = 0$$

$$x^2 - 2x + 1 = 2 \Rightarrow (x-1)^2 = 2$$

$$\Rightarrow x-1 = \pm\sqrt{2}$$

$$\text{ب) } x^2 + x - \frac{1}{4} = 0 \Rightarrow x^2 + x = \frac{1}{4} \Rightarrow x^2 + x + \frac{1}{4} = \frac{1}{4} + \frac{1}{4}$$

$$\Rightarrow \left(x + \frac{1}{2}\right)^2 = \frac{1}{2} + \frac{1}{4} = \frac{3}{4} \Rightarrow x + \frac{1}{2} = \pm\sqrt{\frac{3}{4}} \Rightarrow x = -\frac{1}{2} \pm \frac{\sqrt{3}}{2}$$

$$\text{الف) } x^2 - 2x - 1 = 0$$

$$\Delta = 4 - (-4) = 8$$

$$\frac{2 \pm \sqrt{8}}{2}$$

$$\text{ب) } x^2 + x - \frac{1}{4} = 0$$

$$\Delta = 1 - (-1) = 2$$

$$\frac{-1 \pm \sqrt{2}}{2}$$

$$\text{الف) } x^2 - 11x + 28 = 0 \Rightarrow (x-7)(x-4) = 0 \Rightarrow x = +7, +4$$

$$\text{ب) } x^2 + 3x - 28 = 0 \Rightarrow (x+7)(x-4) = 0 \Rightarrow x = -7, +4$$

$$\text{الف) } 5x^2 - 12x + 7 = 0 \Rightarrow x^2 - 12x + 35 = 0 \Rightarrow (x-7)(x-5) = 0 \Rightarrow x = \frac{7}{5}, \frac{5}{7}$$

$$\text{ب) } 3x^2 - 10x + 7 = x^2 - 10x + 21 \Rightarrow (x-7)(x-3) = 0 \Rightarrow x = \frac{7}{3}, \frac{3}{7} = 1$$

$$\text{الف) } 2x^2 - 5x + 3 = 0 \quad 2 - 5 + 3 = 0 \quad x = 1, \frac{c}{a} = \frac{3}{2}$$

$$\text{ب) } 2x^2 + 5x + 3 = 0 \quad \Delta = 25 - 24 = 1 \quad \frac{-5 \pm \sqrt{1}}{4} \Rightarrow x = \frac{-5+1}{4} = -1, \frac{-5-1}{4} = -\frac{3}{2}$$

$$\text{ج) } 2x^2 - 5x + 1 = 0 \quad \Delta = 25 - 8 = 17 \quad \frac{5 \pm \sqrt{17}}{4}$$

$$\text{د) } 4x^2 + 7x + 9 = 0 \quad \Delta = 49 - 144 = -95 \quad \Delta < 0 \Rightarrow \text{لا يوجد حلي حقيقي}$$

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

$$S = -3 \quad P = -2$$

$$\text{الف) } S^2 - 2P = 17 - 12 = 5 = -S$$

$$\text{ب) } S^3 - 3SP = -27 - (-6) = -21 = 2P - 3S$$

$$\text{الف) } \begin{pmatrix} 7 \\ 5 \end{pmatrix} + \begin{pmatrix} 9 \\ 2 \end{pmatrix} = \begin{pmatrix} 16 \\ 7 \end{pmatrix} = 5V$$

$$\text{ب) } \begin{pmatrix} 9 \\ 3 \end{pmatrix} - \begin{pmatrix} 1 \\ 2 \end{pmatrix} = \begin{pmatrix} 8 \\ 1 \end{pmatrix} = 2A$$