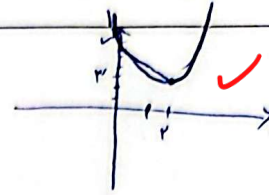


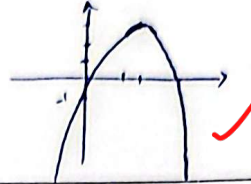
نام و نام خانوادگی سید علی بصری پاسخنامه تشریحی تکلیف شماره ... ۱۲ ... کلاس ... پایه دهم ... B

الف) $y = x^2 - 4x + 7 \rightarrow \text{ext} \mid x_s = \frac{-b}{2a} = 2$
 $y_s = 4 - 8 + 7 = 3$



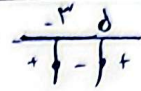
(۲)

ب) $y = -x^2 + 4x - 1 \rightarrow \text{ext} \mid x_s = \frac{-b}{2a} = 2$
 $y_s = -4 + 4 - 1 = -1$



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الف) $\Delta > 0 \Rightarrow m^2 + 2m + 1 - 4m - 14 > 0 \Rightarrow m^2 - 2m - 13 > 0 \Rightarrow (m-5)(m+3) > 0$



(۲)

ب) $\Delta = 0 \Rightarrow m^2 - 2m - 13 = 0 \Rightarrow (m-5)(m+3) = 0 \Rightarrow m \in \{-3, 5\}$

$m \in (-\infty, -3) \cup (5, +\infty)$

۲

ج) $\Delta < 0 \Rightarrow (m-5)(m+3) < 0 \Rightarrow m \in (-3, 5)$

د) $\Delta \geq 0 \Rightarrow (m-5)(m+3) \geq 0 \Rightarrow m \in (-\infty, -3] \cup [5, +\infty)$

$g = (m-2)x^2 - 2(m+1)x + 1$

الف) $\Delta > 0 \Rightarrow 4(m^2 + 2m + 1) - 4(m-2) > 0 \Rightarrow 4m^2 - 4m + 8 > 0 \Rightarrow m^2 - m + 2 > 0$

$S < 0 \Rightarrow \frac{2(m+1)}{m-2} < 0 \Rightarrow \frac{1}{1-1/2} > 0 \Rightarrow m \in (-1, 2)$ ب) $P < 0 \Rightarrow \frac{1}{m-2} < 0 \Rightarrow m \in (-\infty, 2)$
 $P > 0 \Rightarrow \frac{1}{m-2} > 0 \Rightarrow m > 2 \Rightarrow m \in (2, +\infty)$ $S < 0 \Rightarrow \frac{2(m+1)}{m-2} < 0 \Rightarrow m \in (-1, 2)$
 $\Rightarrow m \in (-1, 2)$

(۲)

۳

الف) $P < 0 \Rightarrow \frac{1}{m-2} < 0 \Rightarrow m \in (-\infty, 2)$

ب) $x_s = -2 \Rightarrow \frac{2(m+1)}{2(m-2)} = -2 \Rightarrow m+1 = -2m+4 \Rightarrow 3m = 3 \Rightarrow m = 1$

(۲)

۴

$\Delta \geq 0 \Rightarrow 4 \sin^2 \alpha - 4 \geq 0 \Rightarrow \sin^2 \alpha \geq 1 \Rightarrow \sin \alpha = \pm 1$

$\Rightarrow \frac{4}{3}x^2 + 2x + \frac{3}{4} \Rightarrow S = -3$ غنق رشه منفی

$\Rightarrow \sin = 1 \Rightarrow \frac{4}{3}x^2 - 2x + \frac{3}{4} = 0 \Rightarrow x^2 - 3x + \frac{9}{4} = 0 \Rightarrow (x - \frac{3}{2})^2 = 0 \Rightarrow x = \frac{3}{2}$

(۲)

۵

$$y = \frac{(2x^2 - 1x + 1)(2x^2 - 3x - 5)}{1 - 2x^2} = \frac{(x-1)(2x+1)(x+1)(2x-5)}{-(x-1)(x+1)} = -4x^2 + 12x + 5$$

$$\Rightarrow \text{ext} \left| \begin{array}{l} x_3 = \frac{-b}{2a} = \frac{12}{-4} \\ y_3 = \frac{2 \times 12^2 - 1 \times 12 + 1}{2 \times (-4)} \end{array} \right. \checkmark$$

$$3(\alpha + \beta) = 5\alpha\beta + 1$$

$$s = -\frac{b}{a} = \frac{m+1}{m}, \quad p = \frac{c}{a} = \frac{-1}{m}$$

$$\Rightarrow 3s = 5p + 1 \Rightarrow 3 \times \frac{m+1}{m} = 5 \times \frac{-1}{m} + 1 \Rightarrow 3m + 3 = -5 + 1m$$

$$\Rightarrow 2m = -8 \Rightarrow m = -4 \Rightarrow 2x^2 - 4x - 1 = 0 \quad s = \frac{3}{-4}, \quad p = \frac{-1}{-4}$$

$$\alpha^2 + \beta^2 = s^2 - 2p = \frac{9}{16} + 1 = \frac{25}{16} \checkmark$$

$$x^2 - 5x + 1 = 0$$

$$\Rightarrow \begin{cases} p = \frac{c}{a} = 1 = \alpha\beta \Rightarrow \beta = \frac{1}{\alpha} \Rightarrow \beta^2 = \frac{1}{\alpha^2} \\ s = -\frac{b}{a} = 5 \end{cases}$$

$$\frac{2\alpha + \beta^2}{\alpha\beta^2} = \frac{2\alpha^2 + (\alpha^2\beta^2)\beta^2}{1} = \frac{2(\alpha^2 + \beta^2)}{1} = \frac{2 \times \frac{25}{16}}{1} = \frac{25}{8} = 3.125 \checkmark$$

$$y_1 = ax^2 + bx + c \Rightarrow \begin{cases} y_1 = c \\ y_2 = -1 \end{cases} \Rightarrow c = -1 \Rightarrow y_1 = ax^2 + bx - 1$$

$$y_1 = y_2 \Rightarrow ax^2 + bx - 1 = 2x + 1 \Rightarrow ax^2 + (b-2)x - 2 = 0$$

$$\Rightarrow y_1 = x^2 + 2x + 1 \quad x_3 = \frac{-b}{2a} = \frac{-2}{2} = -1 \quad \left. \begin{array}{l} x_1 = 1 \Rightarrow 1a + 2b - 2 = 0 \\ x_2 = -1 \Rightarrow 1a - 2b - 2 = 0 \end{array} \right\} \Rightarrow 10a - 4 = 0 \Rightarrow a = 1, b = 3 \checkmark$$

$$y = 2x^2 + (m+1)x + m + 4 \quad \left\{ \begin{array}{l} y = y_1 \\ y = y_2 \end{array} \right. \Rightarrow \begin{cases} 2x^2 + mx + m + 4 = 0 \\ \Delta = 0 \Rightarrow m^2 - 4(m+4) = 0 \end{cases}$$

$$\Rightarrow (m-12)(m+4) = 0$$

$$m = 12 \quad m = -4 \checkmark$$

$$m = 12 \Rightarrow 2x^2 + 13x + 16 = 0 \Rightarrow s = -\frac{b}{2a} = -\frac{13}{4}$$