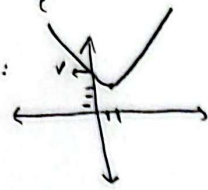


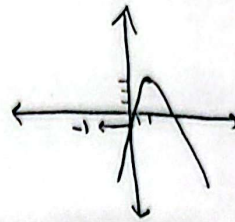
الف) $y = x^2 - 4x + 1$

$\Delta = \frac{b^2 - 4ac}{4a} = 2$



ب) $y = -x^2 + 4x - 1$

$\Delta = \frac{b^2 - 4ac}{4a} = 2$



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$x^2 + (m+1)x + \frac{1}{4}m + 1 = 0$

الف) $\Delta > 0$: $(m+1)^2 - 4(\frac{1}{4}m + 1) = m^2 + 2m + 1 - m - 4 = m^2 + m - 3 > 0$

$(m-3)(m+4) > 0 \Rightarrow m < -4$ یا $m > 3$: $\frac{-2 \pm \sqrt{4 + 12}}{2} = \frac{-2 \pm 4}{2} = -2$ یا 3 : $(-\infty, -2) \cup (3, +\infty)$

ب) $\Delta = 0$: $m = -2$ یا 3

ج) $\Delta < 0$: $m \in (-2, 3)$

د) $\Delta \geq 0$: $m \in (-\infty, -2] \cup [3, +\infty)$

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

الف) $m_1, m_2 < 0$: $\Delta > 0 \Rightarrow (m+1)^2 - 4(m-2) > 0 \Rightarrow m^2 + 2m + 1 - 4m + 8 = m^2 - 2m + 9 > 0$ همیشه درست است.

$S < 0 \Rightarrow \frac{-b}{2a} < 0 \Rightarrow \frac{m+1}{m-2} < 0 \Rightarrow \frac{-1}{m-2} < 0 \Rightarrow m < 2$: $\frac{-1}{m-2} < 0 \Rightarrow m < 2$: $(-\infty, 2)$

$\Rightarrow \emptyset$

ب) $\Delta > 0$: $\frac{m+1}{m-2} < 0 \Rightarrow \frac{-1}{m-2} < 0 \Rightarrow m < 2$: $(-\infty, 2)$

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

۳

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

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

ب) $\Delta < 0$: $\frac{1}{m-2} < 0 \Rightarrow \frac{-1}{m-2} < 0 \Rightarrow m < 2$: $(-\infty, 2)$

ج) $\frac{c}{a} = 1$: $-2m - 2 = 4m - 8 \Rightarrow 4m = 6 \Rightarrow m = \frac{3}{2}$

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$\frac{2x^2}{x} - (x \sin \alpha)x + \frac{9}{x} = 0$: $\Delta \geq 0 \Rightarrow 4 \sin^2 \alpha - 4(\frac{9}{x^2})(\frac{x^2}{x}) \geq 0 \Rightarrow 4 \sin^2 \alpha - 36 \geq 0 \Rightarrow \sin^2 \alpha \geq 9$

$x > 0$: $\sin \alpha = \pm 1 \Rightarrow \frac{2}{x} x^2 - 2x + \frac{9}{x} = 0 \Rightarrow 2x^2 - 2x + \frac{9}{x} = 0 \Rightarrow (2x^3 - 2x^2 + 9) = 0$

$\Rightarrow x = \frac{3}{2}$

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

$\Rightarrow x = \frac{-3}{2}$

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$$y = \frac{(2n^2 - 2n - 1)(2n^2 - 2n - 1)}{1 - 2n} = \frac{(n-1)(n+\frac{1}{2})(n+1)(n-\frac{1}{2})}{(n-1)(n+\frac{1}{2})} \rightarrow (n+1)(n-\frac{1}{2}) = 2n^2 - 2n - 1$$

$$\Rightarrow \frac{\frac{1}{2}}{1} = \frac{-12 - 14}{22} = \frac{-26}{22} = \frac{-13}{11}$$

6
?

?

$$mn^2 - (m+1)n - r = 0 : n_1 + n_2 = 3^r - 2r = ?$$

$$rS = \omega p + v : r \times \left(\frac{m+1}{m} \right) = 0 \left(\frac{-r}{m} \right) + v : \frac{r+1}{m} = \frac{-1+v}{m} \rightarrow \{m=1\} : m=1 \checkmark$$

$$\frac{b}{a} = \frac{r}{1} \Rightarrow p = \frac{c}{a} = \frac{-r}{1} = -r : 3^r - 2r = \frac{a}{1} \times \left(\frac{1}{1} \right) = \frac{1}{1} + 1 = \frac{1}{1}$$

Y

$$2^r - \omega n + r = 0 \rightarrow \alpha, \beta : \omega = 0 \Rightarrow p = r$$

$$\frac{\{ \alpha + \beta^2 \}}{\omega / \beta^2} \times \alpha^r \rightarrow \frac{\{ \alpha^r + \beta^2 \alpha^r \}}{\omega \alpha^r + \beta^2 \alpha^r} = \frac{\{ \alpha^r + (\beta^2 \alpha^r) \}}{\omega \alpha^r} : \frac{\alpha^r + \beta^2}{\omega} = \frac{12 - 2 \times 12}{0} = \frac{0}{0} = 19$$

A

$$\alpha^r + \beta^r = (\alpha + \beta)^r - r(\alpha\beta)(\alpha + \beta) = 3^r - rps$$

$$y_1 = a2^r + b2^t + c \rightarrow n = 3 - r : y_r = 2^r x + 1 \rightarrow \begin{cases} n = r \Rightarrow 1 \times y \\ n = -r \Rightarrow 1 \times y \end{cases} \Rightarrow \begin{cases} n = r : \{ a + 2^r b + c = 1 \} \rightarrow 2^r a + b = 0 \\ n = -r : \{ a - 2^r b + c = 1 \} \rightarrow 2^r a - b = 0 \end{cases}$$

$$\Rightarrow \begin{cases} 2^r a + b = 0 \\ 2^r a - b = 0 \end{cases} \rightarrow \underline{a=1} \Rightarrow \underline{b=2}$$

$$\Rightarrow y_1 = 2^r + 2^r x + 1$$

$$\Rightarrow \frac{-b}{2a} = \frac{-2}{2} = -1$$

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$$y_1 = 2n^r + (m+1)n + (m+1) : \rightarrow y = n < 2$$

$$y_1 = y_r : 2n^r + (m)n + (m+1) = 0 \rightarrow \frac{-b}{2a} = \frac{-1}{2} < 0 \rightarrow \frac{-b}{2a} = \frac{-1}{2} < 0$$

$$m = 12 : 2n^r + 12n + 13 = 0 \rightarrow \frac{-b}{2a} = \frac{-12}{2} = -6 < 0 \rightarrow \frac{-b}{2a} = -6 < 0$$

$$n = -2 \rightarrow 2n^r - 2n + 1 = 0 \rightarrow \frac{-b}{2a} = \frac{-2}{2} = -1 < 0 \checkmark$$

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