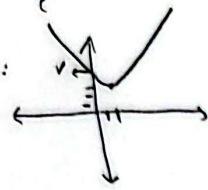


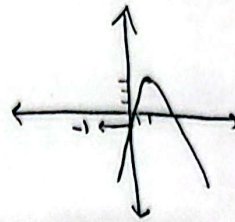
الف) $y = x^2 - 4x + 1$

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



ب) $y = -x^2 + 4x - 1$

$\Delta = 2$



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

الف) $\Delta > 0$: $(m+1)^2 - 4(2)(\frac{1}{2}m + 2) = m^2 + 2m + 1 - 4m - 8 = m^2 - 2m - 7 > 0$

$(m-5)(m+3) \rightarrow a, -3 : \frac{-2 \pm \sqrt{4+28}}{2} : (-\infty, -3) \cup (5, +\infty)$

ب) $\Delta = 0$: $m = -3, 5$

ج) $\Delta < 0$: $m \in (-3, 5)$

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

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

الف) $\Delta > 0$: $(m+1)^2 - 4(m-2)(1) > 0 \rightarrow m^2 + 2m + 1 - 4m + 8 = m^2 - 2m + 9 > 0$

$\Delta < 0$: $\frac{1}{m-2} < 0 \rightarrow \frac{1}{m-2} < 0 \rightarrow m < 2$

$\Delta = 0$: $m = 2$

$\frac{1}{m-2} < 0 \rightarrow m < 2$

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

الف) $\Delta < 0$: $\frac{1}{m-2} < 0 \rightarrow m < 2$

$\Delta = 0$: $m = 2$

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

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

$\sin \alpha = \pm 1 \rightarrow \frac{2}{x} x^2 - 2x + \frac{9}{x} = 0 \rightarrow 2x^2 - 2x + \frac{9}{x} = 0 \rightarrow (2x^2 - 2x + 9) = 0$

$\Delta = 4 - 72 = -68 < 0$

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

$\Delta = 4 - 72 = -68 < 0$

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

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

6

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?

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

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

$$\frac{b}{a} = \frac{r}{1} \Rightarrow p = \frac{c}{a} = \frac{-r}{1} = -1 : 3^r - 2p = \frac{9}{1} \rightarrow r \times \left(\frac{1}{1} \right) = \frac{1}{1} + 1 = \frac{1}{1}$$

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

$$\frac{\{ \alpha + \beta \}}{\omega / \beta^2} \times \alpha^r \rightarrow \frac{\{ \alpha^r + \beta^r \}}{\omega \alpha^r + \beta^r} = \frac{\{ \alpha^r + (\beta^r / \alpha^r) \}}{\alpha \times \beta} : \frac{\alpha^r + \beta^r}{\omega} = \frac{120 - 2 \times 120}{\omega} = \frac{90}{\omega} = \frac{19}{\omega}$$

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

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

$$(0, 1) \rightarrow \frac{b}{ra} = ?$$

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

$$\Rightarrow y_1 = n^r + r n + 1$$

$$\Rightarrow \frac{b}{ra} = \frac{-r}{r}$$

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$$y_1 = 2n^r + (m+1)n + (m+1) : \rightarrow \text{مساواة بين الطرفين}$$

$$y_1 = y_r : 2n^r + (m+1)n + (m+1) = 0 \rightarrow \frac{\Delta}{4} = 0 : m^2 - 12m - 12 = 0 \rightarrow \frac{12 \pm \sqrt{144 + 48}}{2} \checkmark$$

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

$$n = -2 \rightarrow 2n^r - 13n + 13 = 0 \rightarrow \frac{-b}{ra} = \frac{13}{2} = 13 \checkmark$$

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