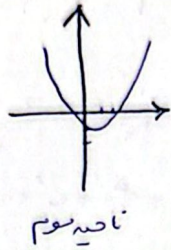


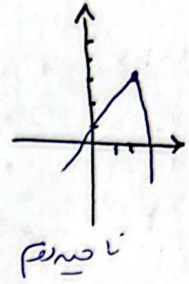
الف) $y = 3x^2 - 2x$

ext $\left| \begin{array}{l} \frac{1}{3} \\ -\frac{1}{3} \end{array} \right.$



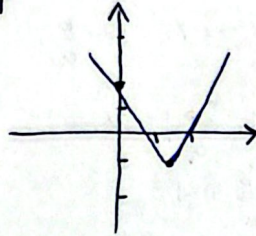
ب) $y = -x^2 + 4x$

ext $\left| \begin{array}{l} 2 \\ 4 \end{array} \right.$



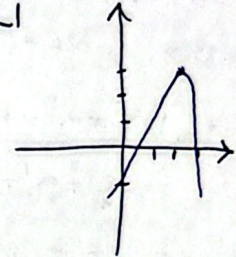
الف) $y = 2x^2 - 2x + 2$

ext $\left| \begin{array}{l} \frac{5}{2} \\ -\frac{1}{2} \end{array} \right.$



ب) $y = -x^2 + 4x - 1$

ext $\left| \begin{array}{l} 2 \\ 2 \end{array} \right.$



$x^2 - x - 2 = 0$

الف) $\frac{\alpha + \beta}{\alpha - \beta} = \frac{1}{\sqrt{13}} = \frac{\sqrt{13}}{13}$

ب) $\alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta = 1 + 4 = 5$

ج) $\alpha^4 + \beta^4 = (\alpha^2 + \beta^2)^2 - 2\alpha^2\beta^2 = 5 + 9 = 14$

د) $\alpha^4 - \beta^4 = (\alpha^2 - \beta^2)(\alpha^2 + \beta^2) = 4\sqrt{13}$

$y = (x-2)(x^2 - ax + a)$

$x = 2$

① $\Delta < 0 \rightarrow a^2 - 4a < 0 \rightarrow 0 < a < 4$
 ② $(x-2)^2 = x^2 - 4x + 4 \rightarrow a = 4$

$\left. \begin{array}{l} \text{①} \\ \text{②} \end{array} \right\} 0 < a \leq 4$

$\begin{array}{cc} 0 & 4 \\ + & - \\ 4 & - \end{array}$

$\alpha + \beta = 4 \quad \alpha\beta = -\frac{9}{r} \quad \alpha^2 + \beta^2 = 14 + \frac{2a}{r}$

$2\alpha^2 + \beta^2 - 6\alpha = 7 \rightarrow (\alpha - 2)^2 + \alpha^2 + \beta^2 = 11$

$\frac{14 + \frac{2a}{r}}{\alpha + \beta}$

$\alpha^2 + 4 - 6\alpha + 6\alpha + 6\beta + \frac{2a}{r} = 11 \rightarrow \alpha^2 - 3\beta - \beta^2 = 7$

$14 + \frac{2a}{r} + \frac{a}{r} = 7 \rightarrow \boxed{a = -9}$

$$b = \frac{r(a+r) + v - ra}{r} = \Delta \rightarrow s : \left| \begin{array}{c} \Delta \\ r \end{array} \right.$$

$$\left. \begin{array}{l} a-r \geq 1 \rightarrow a \geq r, a \in \mathbb{N} \\ v-ra \geq 1 \rightarrow a \leq r, a \in \mathbb{N} \\ ra+r \geq 1 \rightarrow a \geq -r, a \in \mathbb{N} \end{array} \right\} a=r$$

$$A \mid 1^r, B \mid 1$$

$$y = a'(x-a)^r + r$$

$$1 = a'(9-a)^r + r \rightarrow a' = \frac{-1}{r}$$

$$-\frac{b'}{ra'} = \Delta \rightarrow -b' = 1 \cdot a' \rightarrow b' = \frac{1}{r} = \frac{\Delta}{\epsilon}$$

$$1 = \frac{1}{r} + \frac{\Delta}{\epsilon} + c' \rightarrow c' = \frac{-1}{r}$$

$$y = \frac{-1}{r}x + \frac{\Delta}{\epsilon} + \frac{1}{r} \rightarrow \left| \frac{c'}{r} = \frac{1}{r} \right|$$

$$ax^r - ax - b = 0$$

$$\alpha + \beta = 1, \alpha\beta = -\frac{b}{a}, \alpha\beta^r - \alpha\beta - b = 0 \rightarrow \beta^r - \beta = \frac{b}{a}$$

$$r \cdot (r\beta^r + \alpha^r - \beta) = 1v$$

$$\rightarrow r + (1 \cdot \frac{r^2 b}{a}) = 1v$$

$$\frac{b}{a} + \alpha^r + \beta^r$$

$$\frac{r+b}{a} = -1$$

$$s^r - r\rho = 1 + \frac{r^2 b}{a}$$

$$|\alpha - \beta| = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{9r^2 + 4ab}}{|a|} = \frac{\sqrt{(\epsilon \cdot b^r - \Delta \cdot b^r)}}{|a|} = \frac{\sqrt{\Delta} \times b}{|1 - r \cdot b|} = \frac{a = r \cdot b}{r \cdot b} \rightarrow \frac{\sqrt{\Delta} \times b}{r \cdot b} = \frac{r\sqrt{a}}{a}$$

$$\frac{y}{r} = r \rightarrow \frac{-b}{ra} = r - a = -r \quad \left| \begin{array}{c} -r \\ -\frac{1}{r} \end{array} \right|, \left| \begin{array}{c} 0 \\ r \end{array} \right.$$

$$y = ax^r + bx + \frac{r}{r}$$

$$-\frac{1}{r} = ra - \Delta a + \frac{r}{r} \rightarrow a = \frac{1}{r} \rightarrow b = r$$

$$y = \frac{1}{r}x^r + rx + \frac{r}{r} \rightarrow \beta = \frac{1}{r} + r + \frac{r}{r} = \epsilon$$

$$\alpha + \beta = -4, \alpha\beta = a$$

$$\Delta = r^2 - 4a \rightarrow \frac{-4 \pm r\sqrt{9-a}}{r} = -r \pm \sqrt{9-a}$$

$$-r - \sqrt{9-a} = \alpha, -r + \sqrt{9-a} = \beta$$

$$r\alpha^r + r\beta^r = r(\alpha^r + \beta^r) + \alpha^r = 9 \cdot -\Delta a + 4\sqrt{9-a}$$

$$(r - \sqrt{9-a})^r = 9 + 9 - a + 4\sqrt{9-a}$$

$$9 \cdot -\Delta a + 4\sqrt{9-a} = \Delta a + 12\sqrt{r}$$

$$\Delta a = \Delta \rightarrow \alpha = 1$$

$$\sqrt{\frac{1}{a}} + \sqrt{\frac{1}{\beta}} = \Delta \rightarrow \frac{\sqrt{\alpha + \beta}}{\sqrt{\alpha\beta}} = \Delta$$

$$(\alpha\beta = \frac{1}{ry})$$

$$\frac{\sqrt{\alpha\beta}}{\frac{1}{y}}$$

$$\sqrt{\alpha + \beta} = \frac{\Delta}{y}$$

$$\alpha + \beta + \frac{1}{r} = \frac{ra}{ry} \rightarrow \alpha + \beta = \frac{1r}{ry}$$

$$\frac{m+1\epsilon}{ry} = \frac{1r}{ry} \rightarrow m = (-1)$$

$$y = -x^r + rx + r \rightarrow \frac{c}{a} = -r$$