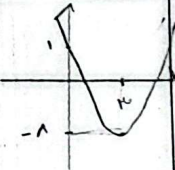
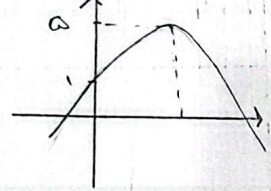


الف)  $y = 2x^2 - 4x + 1$   $\text{ext} \left\{ \begin{array}{l} -\frac{b}{2a} \rightarrow \frac{4}{4} = 1 \\ -\frac{\Delta}{4a} \rightarrow 2(1) - 4(1) + 1 = -1 \end{array} \right. \rightarrow \text{ext} \left| \begin{array}{l} 1 \\ -1 \end{array} \right.$  تابع مربع است چون  $a > 0$

ب)  $y = -2x^2 + 2x - 5$   $\text{ext} \left\{ \begin{array}{l} -\frac{b}{2a} \rightarrow \frac{-2}{-4} = \frac{1}{2} \\ -\frac{\Delta}{4a} \rightarrow \frac{4ac - b^2}{4a} = \frac{4(-5) - 4}{-8} = -\frac{24}{-8} = 3 \end{array} \right.$  تابع مربع است چون  $a < 0$

الف)  $y = x^2 - 4x + 1$   $\begin{array}{l} n=0 \\ \searrow \\ c=1 \\ \searrow \\ a>0 \end{array}$   $\text{ext} \left\{ \begin{array}{l} -\frac{b}{2a} \rightarrow \frac{4}{2} = 2 \\ -\frac{\Delta}{4a} \rightarrow (2)^2 - 4(2) + 1 = -1 \end{array} \right.$   ۲

ب)  $y = -x^2 + 4x + 1$   $\begin{array}{l} n=0 \\ \searrow \\ c=1 \\ \searrow \\ a<0 \end{array}$   $\text{ext} \left\{ \begin{array}{l} -\frac{b}{2a} = \frac{-4}{-2} = 2 \\ -\frac{\Delta}{4a} = \frac{-(-4)^2 - 4(1)}{-4} = -\frac{20}{-4} = 5 \end{array} \right.$   ۲

$x^2 - 5x + 0$   $\begin{array}{l} \xrightarrow{s} \alpha + \beta = 1 \\ \xrightarrow{p} \alpha\beta = -2 \end{array} \left. \right\} \rightarrow x^2 - 2x - 2$   $\left. \begin{array}{l} \rightarrow \alpha = -1, \beta = 2 \\ \rightarrow \alpha = 2, \beta = -1 \end{array} \right\}$

$\alpha = -1$   $\rightarrow \alpha + \beta = 1 \rightarrow \beta = 2$   
 $\alpha\beta = -2 \rightarrow (-1)(2) = -2$  ک = ۲

$\sqrt{\alpha} - \sqrt{\beta} = 1 \rightarrow \alpha + \beta - 2\sqrt{\alpha\beta} = 1 \rightarrow 5 - 2\sqrt{p} = 1$   
 $2\sqrt{p} = 4 \rightarrow \sqrt{p} = 2 \rightarrow p = 4$   
 $\rightarrow 2x - 2\sqrt{x} + 1 = 0 \rightarrow \sqrt{x} = 1, -\frac{1}{2} \rightarrow x = 1 \rightarrow 2x^2 + x - 1 = 0$   
 $\rightarrow p = \frac{c}{a} = -\frac{1}{2}$  عبارت اول قبول

$y = 2x^2 - (m+2)x + m$   $\alpha - \beta = \frac{\Delta}{|a|} = \frac{\sqrt{(m+2)^2 - 4 \cdot 2 \cdot m}}{2} = \frac{\sqrt{(m-2)^2}}{2} = \frac{|m-2|}{2}$

$S = \frac{1}{2} \times \frac{|m-2|}{2} \cdot m = \frac{m}{4} \rightarrow |m-2| \cdot m = 2 \rightarrow m^2 - 2m = 2$

$y = x^2 - mx + 1$  سعی  
 $y = x^2 + 2x + 1 \rightarrow x = -\frac{b}{2a} = \frac{2}{2}$   
 $y = x^2 + x + 1 \rightarrow x = -\frac{b}{2a} = -\frac{1}{2}$

$m^2 - 2m - 2 = 0$   
 $\rightarrow m = 2$   
 $\rightarrow m = 1$

$$y = ax^2 + rx + a \xrightarrow{x = -\frac{r}{2a}} a \left( \frac{-r}{2a} \right)^2 + r \left( \frac{-r}{2a} \right) + a = \frac{V}{\Lambda} \rightarrow y = \min$$

$$x_s = -\frac{b}{2a} = -\frac{r}{2a}$$

$$D = r^2 - 4a^2 = 4r^2$$

$$\frac{-4 + 4a^2}{4a} = \frac{V}{\Lambda} \rightarrow \Lambda a^2 - Va - 1\Lambda = 0$$

$$\Lambda a^2 - Va - 1\Lambda = 0 \rightarrow a_1 = \frac{V + \sqrt{V^2 + 4\Lambda^2}}{2\Lambda} \rightarrow a_2 = \frac{V - \sqrt{V^2 + 4\Lambda^2}}{2\Lambda}$$

تابع  $y$  را در  $x = -\frac{r}{2a}$  مینویسیم  
 $\frac{-11}{14} = -\frac{9}{\Lambda}$

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$$x^2(a+1)x + a = 0 \rightarrow \frac{a+b+c=0}{x = \frac{c}{a} = a} \rightarrow \begin{cases} x_1 = r \\ x_2 = 1 \end{cases}$$

$$x^2 - (ra+1)x + b = 0 \rightarrow x^2 - 10x + b = 0 \xrightarrow{s=10} \begin{cases} x_1 = 4 \\ x_2 = 6 \end{cases}$$

$$P_1 - P_2 = (4 \times 6) - (3 \times 1) = 21$$

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$$y_1 = -ax^2 + ax + r \rightarrow \text{ext} \left| \begin{aligned} -\frac{b}{2a} &\rightarrow -\frac{a}{-2a} = \frac{1}{2} \\ \frac{\Delta}{4a} &\rightarrow \frac{a^2 - 4a^2}{4a^2} = \frac{a^2 - 4a^2}{4a^2} = \frac{-3a^2}{4a^2} = -\frac{3}{4} \end{aligned} \right. \rightarrow \frac{a+1}{r}$$

$$y_2 = rbx^2 - bx - 1 \rightarrow \text{ext} \left| \begin{aligned} -\frac{b}{2a} &\rightarrow -\frac{b}{2r} \\ \frac{\Delta}{4a} &\rightarrow \frac{b^2 - 4r^2}{4r^2} = \frac{b^2 - 4r^2}{4r^2} \end{aligned} \right. \rightarrow \frac{-b-1}{r}$$

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

$$\frac{r}{r} - r + r = -\frac{1}{r} \rightarrow -\frac{b-1}{r} = -\frac{1}{r} \rightarrow b-1 = 1 \rightarrow b = 2$$

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if  $\beta > \alpha$ ,  $y = r\alpha a x^2 + rx + \beta \rightarrow x + \beta = -\frac{r}{r\alpha a}$   
 $\rightarrow x\beta = \frac{\beta}{r\alpha a} \rightarrow r\alpha a^2 = 1$   
 $a^2 = \frac{1}{r\alpha} \rightarrow a = \pm \frac{1}{\sqrt{r\alpha}}$

$\times$  if  $\alpha = \frac{1}{a} \rightarrow \beta = -1$   
 $\checkmark$  if  $\alpha = -\frac{1}{a} \rightarrow \beta = +1$

$\xrightarrow{\beta > \alpha} y = -\frac{b}{ra} = -\frac{r}{-1 \cdot r} = \frac{r}{a}$

$y = -a \times \frac{r}{ra} + \frac{1}{a} + 1 = \frac{4}{a}$

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$$y = x^2 - (a^2 + b^2 - 12)x + a + b - 1 = 0$$

$$\begin{cases} s = a^2 + b^2 - 12 \rightarrow s = \alpha + \beta \\ p = a + b - 1 \rightarrow p = s - 1 \end{cases}$$

$$s = s^2 - 2p - 12 \rightarrow ab = a + b - 1$$

$$s = s^2 - 2s + r - 12 \rightarrow s^2 - 3s - 10 = 0$$

$$(s-5)(s+2) = 0 \rightarrow \begin{cases} s = 5 \\ s = -2 \end{cases}$$

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