

نام و نام خانوادگی: ..... پاسخنامه تشریحی تکلیف شماره ۱۳۰۰ کلاس: ..... بازدهم: .....  
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اگر خط تقارن سهمی  $\alpha = 2$  است پس  $-\frac{b}{2a} = 2 \rightarrow b = -4$

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

برای اینکه مثل برخورد با محور  $x$ ها را بفهمیم باید  $y = 0$  باشد:  
 $y = -\frac{1}{4}x^2 + x + 3 \xrightarrow{y=0} -\frac{1}{4}x^2 + x + 3 = 0$

$x(-1) \rightarrow x^2 - 4x - 12 = 0 \rightarrow (x-4)(x+3) = 0 \rightarrow x = +4, -2 \rightarrow$  طول مثبت = 4 ✓

مثال

چون بین درجه ۲ و ۱ (شده پس سهمی) Max دارد

$\Delta > 0 \rightarrow 2\Delta - 2m^2 > 0 \rightarrow 2\Delta > 2m^2$

$\rightarrow m^2 < \frac{2\Delta}{2} \xrightarrow{\sqrt{\quad}} |m| < \frac{\Delta}{2} \Rightarrow \left(-\frac{\Delta}{2} < m < \frac{\Delta}{2}\right)$

$m = \left(-\frac{\Delta}{2}, \frac{\Delta}{2}\right) \cap (-\infty, 0) = \left(-\frac{\Delta}{2}, 0\right)$  ✓

$\frac{-b \pm \sqrt{\Delta}}{2a} = \frac{3 \pm \sqrt{\Delta}}{3} \rightarrow -b = 3 \rightarrow b = -3$   
 $2a = 3 \rightarrow a = \frac{3}{2}$

$\Delta = b^2 - 4ac = \Delta$

$\rightarrow 9 - 4c = \Delta \rightarrow c = \frac{9-\Delta}{4} = \frac{3}{4}$

$\frac{3}{2}x^2 - 3x + \frac{3}{4} = 0 \xrightarrow{\times 4} 3x^2 - 12x + 3 = 0$   
 چون فاصله صغری خواد ✓

$2\alpha^2 + \beta^2 = 2\alpha^2 + \alpha^2 + 2\beta^2 - \beta^2 \rightarrow 2(\alpha^2 + \beta^2) + (\alpha^2 - \beta^2) = 2(\alpha^2 + \beta^2) + (\alpha + \beta)(\alpha - \beta) = 12$

$\rightarrow 2(5^2 - 2\rho) + (5)\left(\frac{\sqrt{\Delta}}{1a}\right) = 12$

$S = 5$   
 $\rho = \frac{m+2}{2}$

$\Delta = 4\rho - 4(\rho)(m+2) - 12m - 14$

$2\left(\frac{14-m}{2}\right) + (5)\left(\frac{\sqrt{4(12-2m)}}{2}\right) = 12$

$\Delta = 4(12-2m)$

$2x - 2m + 5\sqrt{12-2m} = 12 - 14 \rightarrow 2m - 5\sqrt{12-2m} = 14$   
 $\Rightarrow m - 1 = 2\sqrt{12-2m} \xrightarrow{2\text{ضرب}} m^2 - 14m + 4 = 48 - 8m \rightarrow m^2 - 8m + 14 = 0$

$y = a(x - \text{نقطه سهمی})^2 + \text{نقطه سهمی}$

$\rightarrow y = a(x-2)^2 + 9 \xrightarrow{(\Delta=0)} \Delta = 4a + 9 \rightarrow a = -1$

$y = -(x-2)^2 + 9 = -(x^2 - 4x + 4) + 9 = -x^2 + 4x - 4 + 9 =$

$-x^2 + 4x + \Delta = 0 \xrightarrow{a+c=b} x = -1$   
 $x = \Delta$

✓  $(-1, \Delta)$

چون سهمی Max دارد  
 پس در بین درجه ۲ باید  
 محور  $x$ ها است

$(m-2)^2 = 0$   
 $\Rightarrow m = 2$   
 جواب ✓

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| $\frac{1}{\alpha} + \frac{1}{\beta} = \frac{\alpha + \beta}{\alpha\beta} = \frac{S}{P}$ $S = \frac{V}{\alpha} \longrightarrow \alpha + \beta = \frac{V}{\alpha} \begin{cases} \alpha = r \rightarrow r + \beta = \frac{V}{r} \rightarrow \beta = \frac{-r}{r} \checkmark \\ \alpha = -r \rightarrow -r + \beta = \frac{V}{-r} \rightarrow \beta = \frac{r}{-r} \checkmark \end{cases}$ $P = \frac{q\beta}{\alpha} \rightsquigarrow \alpha \cdot \beta = \frac{q\beta}{\alpha} \rightsquigarrow \alpha^2 = q$ $\alpha = \pm r \left\{ \frac{1}{\alpha} + \frac{1}{\beta} = \frac{S}{P} = \frac{\frac{V}{\alpha}}{\frac{q\beta}{\alpha}} = \frac{V}{q\beta} = \frac{V}{r \times \frac{r}{r}} \right\} \rightarrow \frac{V}{q}$ | <p>(2)</p> <p>6</p> <p><math>\frac{V}{q}</math> ✓</p>                                                                                          |
| $\alpha^r - m\beta = \lambda \quad \beta^r - r\alpha = -m\beta \leftarrow \text{طبقه } \alpha = \beta$ $\rightarrow \alpha^r + \beta^r = r\alpha + \lambda \longrightarrow S^r - rP = r\alpha + \lambda \quad \begin{matrix} S = -m \\ P = -r\alpha \end{matrix}$ $m^r - r(-r\alpha) = r\alpha + \lambda \rightarrow m^r + r^2\alpha = r\alpha + \lambda \rightarrow m^r + r\alpha - \lambda = 0$ $(m + \varepsilon)(m - r) = 0 \rightarrow m = r \rightarrow \Delta > 0 \rightarrow m^r + \lambda m = 0 \rightarrow \frac{-\lambda}{+1-1} = 0$ $\rightarrow m = -\varepsilon \checkmark \rightarrow \Delta < 0 \rightarrow S = -m \xrightarrow{m=r} S = -r \checkmark \text{ جواب}$                                         | <p>(2)</p> <p>7</p>                                                                                                                            |
| $\frac{-\Delta}{r\alpha} = \lambda \rightsquigarrow -\left(14 - f(m)\left(\frac{m+1\varepsilon}{r}\right)\right) = -(14 - r\alpha^r - r\lambda m) = r^2m$ $\rightarrow r\alpha^r + r\lambda m - 14 = r^2m \rightarrow r\alpha^r - f\alpha m - 14 = 0 \rightarrow m^r - r\alpha - \lambda = 0 \rightarrow$ $(m - \varepsilon)(m + r) = 0 \rightarrow m = r \checkmark \rightarrow m^r \rightarrow \text{ضرب } \alpha^r \text{ منفی است}$ $f(x) = -r\alpha^r + \varepsilon x + 4 \rightsquigarrow \alpha = -1 \rightarrow \alpha = r \rightarrow k = r \checkmark$                                                                                                                                                             | <p>(2)</p> <p>8</p>                                                                                                                            |
| $S(r, y) \rightarrow y = a(\alpha - r)^r + y \xrightarrow{(\cdot \cdot \varepsilon)} f = fa + y \rightsquigarrow a = -\frac{1}{r}$ $\rightarrow y = -\frac{1}{r}(\alpha - r)^r + y \rightarrow -\frac{1}{r}(m^r - \varepsilon\alpha + \varepsilon) + y \rightsquigarrow -\frac{1}{r}\alpha^r + \varepsilon\alpha - r + y = y$ $y = \frac{-\alpha^r}{r} + r\alpha + \varepsilon = 0 \rightsquigarrow -\alpha^r + f\alpha + \lambda = 0 \rightarrow \begin{matrix} S = f \\ P = -\lambda \end{matrix}$ $\frac{1}{\alpha} + \frac{1}{\beta} = \frac{\alpha + \beta}{\alpha\beta} = \frac{S}{P} \rightsquigarrow \frac{\varepsilon}{-\lambda} = \frac{-1}{r} \checkmark$                                                         | <p>(2)</p> <p>9</p>                                                                                                                            |
| $\alpha = r \rightarrow f - \lambda\alpha - \lambda + r\alpha^r + 4\alpha + r = 0 \rightarrow r\alpha^r - r\alpha - 1 = 0 \rightarrow a = \frac{1}{r}$ $a = 1 \rightarrow \Delta > 0 \rightarrow \alpha^r - \lambda\alpha + 1r = 0 \rightarrow \alpha = r \rightarrow \alpha = 4 \checkmark$ $a = -\frac{1}{r} \rightarrow \Delta > 0 \rightarrow \alpha^r - \frac{\lambda}{r}\alpha + \frac{\varepsilon}{r} = 0 \rightarrow \alpha = r \rightarrow m = \frac{r}{r} \checkmark$                                                                                                                                                                                                                                              | <p>(2)</p> <p>10</p> <p>به ازای هر دو مقدار <math>\alpha</math><br/>معادله درجه دو به ازای<br/>هر <math>a</math> این 2 جواب<br/>به دست آمد</p> |