

۱۴,۷۵

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$$y = (a-1)x^2 + x + 3$$

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

$$y=0 \rightarrow -\frac{1}{2}x^2 + x + 3 = 0 \quad x^2 - 2x - 6 = 0 \quad (x-4)(x+2) = 0$$

طول مثبت

$x_1 = 4 \quad x_2 = -2$

x	x_1	x_2
$f(x)$	$-$	$+$

$$f(x) = mx^2 - \omega x + m$$

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

$m < 0$

$$s = \alpha + \beta = \frac{3+\sqrt{5} + 3-\sqrt{5}}{3} = \frac{6}{3} = 2 \quad p = \alpha \times \beta = \frac{3+\sqrt{5}}{3} \times \frac{3-\sqrt{5}}{3} = \frac{4}{9}$$

$$x^2 - sx + p \rightarrow x^2 - 2x + \frac{4}{9} \xrightarrow{\times 9} 9x^2 - 18x + 4$$

ضرب در ۹

$$2x^2 - 11x + m + 7 = 0 \rightarrow s = \frac{11}{2} = 5.5 \quad p = \frac{m+7}{2} \quad \alpha + \beta = 5.5 \quad \beta = 5.5 - \alpha$$

$$2\alpha^2 + \beta^2 = 17 \rightarrow 2\alpha^2 + (\alpha^2 + \beta^2)$$

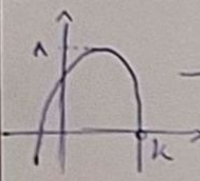
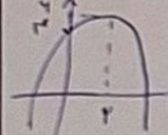
$$3\alpha^2 - 11\alpha + 10 = 17 \quad 3\alpha^2 - 11\alpha - 7 = 0 \quad \alpha^2 - 2\alpha + 1 = 0 \quad (\alpha - 1)^2 = 0$$

$\alpha = 1 \quad \beta = 5.5 - 1 = 4.5 \quad p = \frac{m+7}{2} = 4.5 \quad m+7 = 9 \quad m = 2$

$$s \mid \frac{1}{a} \quad \frac{1}{\omega} \rightarrow y = a(x-h)^2 + k \quad \omega = a(0-2)^2 + 9$$

$$f_a = -f \quad (a = -1) \quad y = -x^2 + 4x + \omega \xrightarrow{x \text{ معادل } y > 0} -x^2 + 4x + \omega > 0$$

$$\frac{-1}{-1} \quad \frac{\omega}{+} \rightarrow -1 < x < \omega$$

$\alpha x^2 - Vx + 9\beta = 0 \quad s = \alpha + \beta = \frac{V}{\alpha} \quad p = \alpha \times \beta = \frac{9\beta}{\alpha}$ $\xrightarrow{\alpha = \frac{V}{\mu}} \mu + \beta = \frac{V}{\mu} \quad \beta = -\frac{V}{\mu} \quad \alpha = -\frac{V}{\mu} \quad -\mu + \beta = -\frac{V}{\mu} \quad \beta = \frac{V}{\mu} \quad \checkmark$ $\frac{1}{\alpha} + \frac{1}{\beta} = \frac{s}{p} \rightarrow \frac{-\mu + \frac{V}{\mu}}{-\frac{V}{\mu} \times \frac{V}{\mu}} = \frac{-\frac{V}{\mu}}{-\frac{V^2}{\mu^2}} = \boxed{\frac{\mu}{V}}$	6
$\alpha^2 + m\alpha - 1m = 0 \quad \alpha + \beta = -m \quad \alpha\beta = -\frac{Vm}{\alpha} \rightarrow \beta = \frac{-Vm}{\alpha}$ $\alpha^2 - m\beta = 1 \quad \alpha^2 - m\left(\frac{-V}{\alpha}\right) = 1 \quad \alpha^2 + \frac{Vm}{\alpha} = 1 \quad \alpha^3 - 1\alpha + Vm = 0 \quad (1, 5)$ $\mu^2 + 1\mu - 1 \quad \left\{ \begin{array}{l} \mu = -\frac{1}{2} \quad \Delta < 0 \quad \times \\ \mu = 1 \quad \Delta > 0 \quad \checkmark \end{array} \right. \quad s = -\mu = -1 \quad \alpha + \beta = -1$ با دقت نوشته شود	7
$f(x) = mx^2 + f'x + \frac{m}{r} + V \quad \frac{-\Delta}{4a} = 1 \quad \left\{ \begin{array}{l} m = 9 \quad \times \\ m = -1 \quad \checkmark \end{array} \right. \quad t(m) = -r_m^2 + r_{m+1} \quad \left\{ \begin{array}{l} m = -1 \\ m = 0 \end{array} \right.$  $\rightarrow m < 0$ $\left\{ \begin{array}{l} x = \frac{-b}{2a} = \frac{-f}{2m} = -\frac{r}{m} \\ y = m\left(-\frac{r}{m}\right) + f'\left(-\frac{r}{m}\right) + \frac{m}{r} + V = -\frac{r}{m} + \frac{m}{r} + V \end{array} \right. \quad x = k = \frac{r}{m} \quad m < 0$	8
 $a(\alpha - \alpha_0)^2 + y_0 \rightarrow a(0 - r)^2 + 1 = 1 \quad 1a + 1 = 1 \quad a = \frac{1}{r}$ $f(x) = -\frac{1}{r}(\alpha - r)^2 + 1 \Rightarrow -\frac{1}{r}\alpha^2 + \alpha + \frac{r}{r} = \alpha^2 - \alpha - 1 \quad y = 0$ $(\alpha - 1)(\alpha + 1) \Rightarrow \alpha_1 = 1 \quad \alpha_2 = -1 \quad \alpha_1 + \alpha_2 = 1 + (-1) = \boxed{0}$ $\frac{1}{\alpha} + \frac{1}{\beta} = \frac{1}{r} \quad (1, 2, 5)$	9
$\alpha^2 - (1a + 1)\alpha + (1a^2 + 4a + 1) = 0 \quad \alpha = 1 \quad 1 - (1a + 1) + (1a^2 + 4a + 1) = 0$ $\Rightarrow 1a^2 - 1a - 1 = 0 \quad \alpha_1 = 1 \quad \alpha_2 = \frac{1+C}{a} = \frac{-1}{\mu}$ $\xrightarrow{\alpha = 1} \alpha^2 - 1\alpha + 1 = 0 \quad (\alpha - 1)(\alpha - 1) \rightarrow \alpha = 1 \quad \alpha = 1$ $\alpha = \frac{1}{r} \quad \alpha^2 - \frac{1}{r}\alpha + \frac{r}{r} = 0 \quad r\alpha^2 - 1\alpha + r = 0 \quad \alpha^2 - 1\alpha + 1 = 0 \quad (\alpha - 1)(\alpha - 1)$ $\alpha = \frac{1}{r} = 1 \quad \alpha = \frac{r}{r} \rightarrow \sqrt{\alpha = 1} \quad \sqrt{\alpha = \frac{r}{r}}$	10