

$$x^2 - mx + r = 0$$

$$\alpha\beta = \varepsilon$$

$$\alpha\beta = r \rightarrow \alpha = \frac{r}{\beta} \rightarrow \frac{r}{\beta} \cdot \beta = r - r\beta \cdot \varepsilon \rightarrow \beta = \frac{r}{r} \rightarrow \alpha = \frac{r}{r} \cdot \frac{r}{r}$$

$$\alpha + \beta = m \Rightarrow \frac{r}{\varepsilon} + \frac{\varepsilon}{r} = \frac{r^2 + \varepsilon^2}{r\varepsilon} = \frac{r^2}{r\varepsilon}$$

$$x^2 - \varepsilon x + m = 0$$

$$\alpha = r\beta$$

$$\alpha + \beta = \varepsilon - \varepsilon\beta = \varepsilon \rightarrow \beta = 1, \alpha = r$$

$$P(x) = r$$

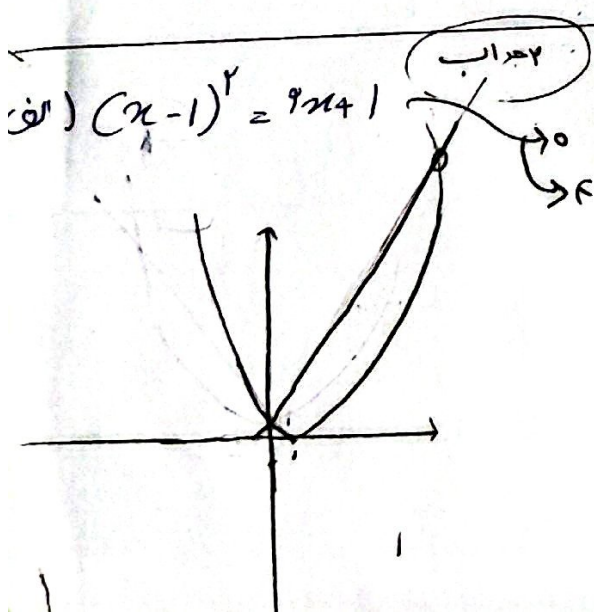
$$x^2 - vx + r = 0 \rightarrow \alpha\beta = r \Rightarrow \alpha = \frac{r}{\beta} \rightarrow \alpha + \frac{1}{\beta} = \alpha + \beta = r \Rightarrow \alpha = r, \beta = r$$

$$\alpha + \frac{1}{\alpha} = r \Rightarrow \alpha + \beta = (a+b) - r\alpha\beta(a+b) = v - r(r)(v) = r \Rightarrow \alpha = r, \beta = r$$

$$\alpha = r, \beta = r$$

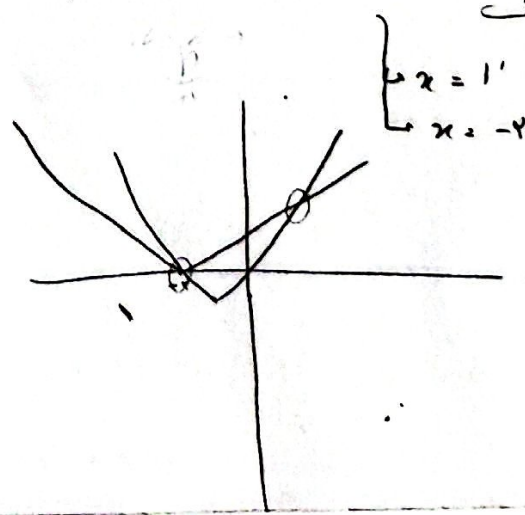
$$h(\varepsilon) = -\omega t^2 + \omega_0 t = 0 \rightarrow t^2 - \omega_0 t = 0 \rightarrow t = 0 \text{ or } t = \omega_0$$

$$\frac{-\Delta}{\varepsilon a} = \frac{-(\omega_0^2 - \omega^2)}{-\varepsilon_0} = \frac{\omega_0^2 - \omega^2}{\varepsilon_0} = 4\pi\omega$$



جواب

$x^2 + 2x = |x+2|$



مسئله یازدهم دختر

نکته: خانوادگی، ریشه‌های

$$y = -x^2 + bx + 3$$

$$-\frac{\Delta}{4a} = \sqrt{\epsilon} \rightarrow -\frac{(b^2 - 4ac)}{4a} = \sqrt{\epsilon} \rightarrow \frac{(b^2 + 12)}{4} = \sqrt{\epsilon} \rightarrow b^2 + 12 = 4\sqrt{\epsilon} \rightarrow b^2 = 4\sqrt{\epsilon} - 12 \rightarrow b = \pm \sqrt{4\sqrt{\epsilon} - 12}$$

$$\Delta > 0 \rightarrow b^2 - 4ac > 0 \rightarrow b^2 - 12 > 0 \rightarrow b^2 > 12 \rightarrow b > \sqrt{12}$$

$$a) f(x) = x^2 + 2x + 3$$

$$x^2 = t \rightarrow t^2 + 2t + 3 = 0 \rightarrow t = -1 \pm \sqrt{1 - 9} = -1 \pm \sqrt{-8}$$

عددی
برقرار است
منهای ندارد

$$b) f(x) = (\epsilon - x^2)^2 - 2(\epsilon - x^2) - 15$$

$$\epsilon - x^2 = t \rightarrow t^2 + 2t - 15 = 0$$

$$(t - 5)(t + 3) = 0 \rightarrow t = 5 \text{ or } t = -3$$

$$\epsilon - x^2 = -3 \rightarrow x^2 = \epsilon + 3 \rightarrow x = \pm \sqrt{\epsilon + 3}$$

$$f - x^2 = 0 \rightarrow x^2 = -1 \text{ (no real solution)}$$

$$\epsilon x^2 - 14x + m = 0$$

$$\alpha = \beta + 2 \rightarrow S = \alpha + \beta = \beta + 2 + \beta = 2\beta + 2 = \epsilon \rightarrow \beta = 1 \Rightarrow \alpha = 3$$

$$p = \frac{m}{\epsilon} = 3 \Rightarrow m = 12$$

$$3x^2 - 4x + m - 1 = 0$$

$$2\alpha - \beta = \epsilon$$

$$\alpha + \beta = 2 \rightarrow \beta = 2 - \alpha \Rightarrow 2\alpha - 2 + \alpha = \epsilon \rightarrow 3\alpha = \epsilon + 2 \rightarrow \alpha = 2, \beta = 0$$

$$\frac{m-1}{3} = 0 \rightarrow m-1=0 \rightarrow m=1$$

$$-mx^2 + \epsilon x + m^2 - 2 = 0$$

$$\alpha\beta = 1 - \frac{m^2 - 2}{-m} = 1 \rightarrow m^2 - 2 = -m \rightarrow m^2 + m - 2 = 0 \rightarrow (m+2)(m-1) = 0 \rightarrow m = -2 \text{ or } m = 1$$

$$\Delta > 0 \rightarrow 19 - 4(-m)(m^2 - 2) = 19 + 4m^3 - 8m > 0$$

$m = 1 \rightarrow 19 - 4 = 15 > 0 \checkmark$
 $m = -2 \rightarrow 19 - 32 = -13 < 0 \times$