

$$\frac{-b}{2a} = \frac{-b}{-2} = \frac{b}{2} \quad -\left(\frac{b}{2}\right)^2 + b\left(\frac{b}{2}\right) + 3 \rightarrow \frac{-b^2}{4} + \frac{b^2}{2} + 3 \rightarrow \frac{b^2}{4} + 3 = 7$$

$$\frac{b^2}{4} = 4 \quad b^2 = 16 \quad \boxed{b = \pm 4}$$

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الف) $x^2 = t \quad t^2 + 2t + 3 = 0 \quad \Delta = 4 - 12 = -8$ جواب ندارد

$$\rightarrow (4 - x^2) = t \quad t^2 - 2t - 14 = 0 \quad (t - 7)(t + 3) = 0$$

$t = 7 \quad 4 - x^2 = 7 \quad x^2 = -3$ غلط

$t = -3 \quad 4 - x^2 = -3 \quad x^2 = 7 \quad \boxed{x = \pm \sqrt{7}} \checkmark$

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$$\alpha = \beta + 2$$

$$s = \frac{-b}{a} = 4 \rightarrow \alpha + \beta = 4 \rightarrow \alpha = 4 - \beta$$

$$4 - \beta = \beta + 2 \quad 2\beta = 2 \quad \boxed{\beta = 1} \quad \boxed{\alpha = 3}$$

$$p = \frac{c}{a} = \frac{m}{4} = \text{ضرب در ۴} \quad \frac{m}{4} = 3 \quad \boxed{m = 12}$$

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$$s = \alpha + \beta = 2 \quad \alpha = 2 - \beta \rightarrow 2\alpha - \beta = 4 \rightarrow 2(2 - \beta) - \beta = 4$$

$$p = \alpha \times \beta = \frac{m-1}{3} \quad 4 - 2\beta - \beta = 4 \quad -3\beta = 0 \quad \beta = 0 \quad \alpha = 2$$

$$\frac{m-1}{3} = 0 \quad \boxed{m = 1}$$

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$$\frac{c}{a} = 1 \quad \frac{m^2 - 2}{-m} = 1 \quad m^2 + m - 2 = 0 \quad (m+2)(m-1) = 0$$

$$m = -2 \quad \boxed{m = 1} \quad \text{GGC}$$

$$m \neq 0 \quad a \neq 0$$

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$$\Delta > 0 \rightarrow m = -2 \rightarrow 2x^2 + 2x + 2 \quad \Delta = 0 \quad \times$$

$$\rightarrow m = 1 \rightarrow -x^2 + 5x - 1 = 0 \quad \Delta > 0 \quad \checkmark$$

$$\alpha + \beta = m$$

$$\alpha \cdot \beta = n$$

$$\alpha \beta^r = r$$

$$\alpha + \beta = m$$

$$\frac{\xi}{\psi} + \frac{a}{\xi} = \boxed{\frac{\xi \psi}{1\psi}}$$

$$\frac{\psi}{\beta} \times \beta^r = r$$

$$\psi \beta = r$$

$$\beta = \frac{\xi}{\psi} \quad \alpha = \frac{a}{\xi}$$

$$\alpha = \psi \beta \rightarrow \xi - \beta = \psi \beta \Rightarrow \beta = 1, \alpha = \psi$$

$$\alpha + \beta = \xi \rightarrow \alpha = \xi - \beta$$

$$\alpha \alpha \beta = m$$

$$\boxed{m = \psi}$$

$$\alpha^r - v \alpha + r = 0 \div \alpha = \alpha - v + \frac{r}{\alpha} = 0 \quad \alpha + \frac{r}{\alpha} = v \quad \alpha = \alpha \quad \beta = \frac{r}{\alpha}$$

$$(\alpha + \beta)^r = \alpha^r + \beta^r + r \alpha \beta (\alpha + \beta)$$

$$\left(\alpha + \frac{r}{\alpha}\right)^r = \alpha^r + \frac{1}{\alpha^r} + r \left(\alpha + \frac{r}{\alpha}\right)$$

$$r \xi^r = \alpha^r + \frac{1}{\alpha^r} + \xi r$$

$$v^r = \alpha^r + \frac{1}{\alpha^r} + \xi r$$

$$\alpha^r + \frac{1}{\alpha^r} = \boxed{r_0}$$

$$\frac{-b}{r_a} = \frac{-\omega_0}{-r_0} = \frac{\omega}{r}$$

$$-1_0 \left(\frac{\omega}{r}\right)^r + \omega_0 \left(\frac{\omega}{r}\right) = \boxed{\frac{r \omega_0}{\xi}} \text{ mark}$$

$$-1_0 t^r + \omega_0 t = 0$$

$$-1_0 t (t - \omega) = 0$$

$$0 \quad t = 0 \quad t = \omega \rightarrow$$

في $t = \omega$ يكون $\omega = 0$ في $t = 0$ يكون $\omega = 0$

$$\text{الف) } x^r - 2x + 1 = 2x + 1 \quad x^r - \xi x = 0 \quad x(x - \xi) = 0$$

$$x = 0 \quad x = \xi$$

$$\rightarrow |x+1| = \text{مست} \quad x \geq -1 \quad x^r + x - 1 = 0 \quad x = 1 \quad x = -1$$

$$|x+1| = \text{منفي} \quad x < -1 \quad x^r + 2x + 1 = 0 \quad x = -1 \quad x = -1 \quad x = 1, x = -1$$