

۱۸, ۲۵

$$x + 3x = + \left(\frac{a}{3} \right)$$

$$\alpha = 8 \rightarrow \boxed{14}$$

$$\alpha = -8$$

$$3x^2 = \frac{8}{3}$$

$$9x^2 = 8$$

$$x = \pm \sqrt{\frac{8}{9}} \checkmark$$

$$\pm \frac{2}{3} + 3\left(\pm \frac{2}{3}\right) = \pm \frac{8}{3} = \frac{a}{3} \quad \frac{8}{3} - \left(-\frac{8}{3}\right) = \frac{16}{3}$$

$$\sqrt{\frac{1}{x_1}} + \sqrt{\frac{1}{x_2}} = 5$$

$$x_1 x_2 = \frac{1}{34}$$

$$x_1 + x_2 = \frac{m+18}{34}$$

$$\frac{1}{x_1} + \frac{1}{x_2} + 9\sqrt{\frac{1}{x_1 x_2}} = 25 \rightarrow m+18 + 2\sqrt{34} = 25 \quad m = -1$$

$$\frac{2}{-1} = \boxed{-2} \checkmark$$

$$(Px + q)(x^2 + (-1)x - 2) = 4x^3 + 11x - 9 - 2 = Px^2 + (q-p)x + (-q-2p)x$$

جمع ریشه ها ضرب ریشه ها

$$P=4 \quad \frac{q-p}{1-(-2)} = -2 \quad -q-2p = -2$$

$$q=1$$

$$\boxed{-3} \checkmark$$

$$(\alpha - \beta)^2 = 5 - 4p$$

$$\alpha - \beta = \sqrt{34 - 4a}$$

$$3\alpha^2 + 2\beta^2 = 12\sqrt{2} + 10 = \frac{0}{2}(\alpha^2 + \beta^2) + \frac{1}{2}(\alpha^2 - \beta^2) = \frac{0}{2}(5+2p) + \frac{1}{2}(\alpha+\beta)(\alpha-\beta)$$

$$\frac{0}{2}(34-2a) - \frac{1}{2}(-1)(\sqrt{34-4a}) = 12\sqrt{2} + 10 \Rightarrow 9 - 0a = 10 \quad a=1 \checkmark$$

$$t^2 - vt - 5 = 0 \Rightarrow t = \frac{v \pm \sqrt{49}}{2} = x^2 \Rightarrow \frac{v - \sqrt{49}}{2} \text{ نوقت}$$

وقت مثبت است

$$x = \pm \sqrt{\frac{v + \sqrt{49}}{2}} \checkmark$$

$$\Rightarrow S = 0$$

$$P = \frac{v + \sqrt{49}}{2} \checkmark$$

وقت!

$$2p^2 - 5sp - 2s = \left(\frac{v + \sqrt{49}}{2} \right)^2 = \left(\frac{49 + v\sqrt{49}}{4} \right) \times 2$$

$$\rightarrow \boxed{49 + v\sqrt{49}}$$

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

$$a = 1 \checkmark$$

$$4x^2 + 4x - 4 = 0$$

$$\alpha + \beta = -\frac{1}{2}$$

$$\alpha\beta = -1$$

$$(\alpha + \frac{1}{r})(\beta + \frac{1}{r}) = -1 + \frac{1}{r}(\alpha + \beta) + \frac{1}{r^2} = -1$$

$$\left[\frac{(r)(-1)}{r} \right] \checkmark$$

(1)

$$|\alpha - \beta| = \frac{\sqrt{\Delta}}{|\alpha|} = \frac{\sqrt{a^2 + 4ab}}{a}$$

$$\epsilon_0 \beta^r + \gamma_0 \alpha^r - \gamma_0 \beta = 14$$

$$\alpha + \beta = 1$$

$$\alpha - \beta = 1 - \beta$$

$$\alpha^r = \beta^r + 1 - \gamma_0 \beta$$

$$\gamma_0 \beta^r - \epsilon_0 \beta + \gamma_0 = 14$$

$$\alpha = 1 - \beta = 0 \mp 2\sqrt{5}$$

$$4\beta^r - 4\beta + 1 = 0$$

$$4\beta^r - 2\beta + 1 = 0 \Rightarrow \beta = \frac{0 \pm \sqrt{5}}{2}$$

$$|\beta - \alpha| = \frac{2\sqrt{5}}{2} \checkmark$$

(2)

$$a = x_1 x_2$$

$$a + 1 = x_1 + x_2$$

$$\Downarrow$$

$$x_1 = 1$$

$$x_2 = 3$$

$$a = 3$$

$$x_1 x_2 = 1 \times 3 = 3 \checkmark$$

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

$$\alpha + \beta = 4 \Rightarrow \alpha = 1, \beta = 3$$

$$\alpha\beta = 3 = 4 \times \frac{3}{4} = 3 \checkmark$$

$$r\epsilon - r^2 = r1 \checkmark$$

(3)

$$\Delta > 0$$

$$(1) + \epsilon + m^r > 0 \Rightarrow m \in \mathbb{R}$$

$$\alpha^r + \beta^r = (\alpha + \beta)^r - r\alpha\beta = (-1)^r + r + m^r$$

$$\alpha + \beta = 3 \checkmark$$

$$(1) + 0 + m^r \Rightarrow m = 0$$

(4)

$$x = 0 \rightarrow 1$$

$$x = 0 \rightarrow \frac{-0 + 3}{r} = -1$$

$$a(x - (1 - \frac{\sqrt{r}}{\sqrt{r}}))(x + \frac{\sqrt{r}}{\sqrt{r}}) = y \rightarrow a(x - \frac{\sqrt{r}}{\sqrt{r}})(x + \frac{\sqrt{r}}{\sqrt{r}}) = 1$$

$$(-1 + \frac{\sqrt{r}}{\sqrt{r}}) + (-1 - \frac{\sqrt{r}}{\sqrt{r}}) = 0$$

$$r + r\alpha^r = 0 \quad \alpha = \sqrt{\frac{r}{r}}$$

$$\alpha = 1 + \sqrt{\frac{r}{r}}$$

$$\beta = 1 - \sqrt{\frac{r}{r}}$$

$$\frac{r}{r}\alpha = 1$$

$$a = \frac{r}{r}$$

(5)

$$rx^r - ax + b = 0 \rightarrow \begin{cases} \alpha \\ \beta \end{cases} \rightarrow S = \frac{a}{r} \quad P = \frac{b}{r} \quad (4)$$

$$rx^r + ax - 4 = 0 \rightarrow \begin{cases} \alpha = -\frac{1}{r} \\ \beta = -\frac{1}{r} \end{cases} \rightarrow S = \frac{a}{r} - 1 = \frac{-a}{ra} = -\frac{1}{r} \rightarrow a = 1$$

$$P = \frac{b}{r} = \frac{-4}{ra} = -r \rightarrow b = -4$$

$$\left[\frac{ab}{r} \right] = \left[-\frac{r}{r} \right] = \boxed{-1}$$