

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

$$r\alpha - r = -1$$

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

$$-\frac{1}{r}x^2 + x + 3 = 0$$

$$x^2 - rx - 12 = 0$$

$$(x-4)(x+3) = 0$$

$$\boxed{x=4} \quad x=-3$$

$$m < 0$$

$$r\Delta - r m' > 0 \quad m' < \frac{r\Delta}{r} \quad -\frac{\Delta}{r} < m < \frac{\Delta}{r} \quad \left. \vphantom{\frac{r\Delta}{r}} \right\} \Rightarrow -\frac{\Delta}{r} < m < 0$$

$$x^2 - rx + \frac{r}{9} = 0$$

$$9x^2 - 18x + r = 0$$

$$r(\alpha^r + \beta^r) + (\alpha^r - \beta^r) = 12$$

$$r(r^r - r(\frac{m+r}{r})) + \frac{r}{r}(-\sqrt{7r-12(m+r)}) = 12$$

$$r^2 - rm - r - \sqrt{7r-12(m+r)} = 12$$

$$-m + 12 = \sqrt{7r-12(m+r)}$$

$$m^2 + 7r - 12m = 7r - 12m - 12$$

$$m^2 - 12m + 12 = 0$$

$$(m-6)^2 = 24 \quad m = 6$$

$$y = a(x-r)^r + 9 \quad x=0 \quad ra + 9 = \Delta$$

$$a = -1$$

$$-(x-r)^r + 9 > 0$$

$$-3 < x-r < 3$$

$$-1 < x < \Delta$$

$$\alpha\beta = \frac{9\beta}{\alpha}$$

$$\alpha^2 = 9$$

$$\alpha = \pm 3$$

$$\left\{ \begin{array}{l} \alpha = 3 \quad 3 + \beta = \frac{9}{3} \quad \beta = -\frac{r}{2} \text{ غلط} \\ \alpha = -3 \quad -3 + \beta = -\frac{9}{3} \quad \beta = \frac{r}{2} \checkmark \end{array} \right.$$

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

$$\alpha^r = -m\alpha + rm$$

$$-m\alpha + rm - m\beta = 12$$

$$-m(\alpha + \beta) + rm - 12 = 0$$

$$m^2 + rm - 12 = 0$$

$$(m+4)(m-3) = 0$$

$$m = -4 \quad m = 3$$

$$P = -2$$

$$m = 3 \rightarrow x^2 + rx - 12 = 0 \quad \Delta > 0 \checkmark$$

$$m = -4 \rightarrow x^2 - rx + 12 = 0 \quad \Delta < 0 \text{ غلط}$$

$$\frac{-17 + 2m^2 + 2\Lambda m}{2m} = \Lambda$$

$$2m^2 - 2m - 17 = 0$$

$$m^2 - m - \Lambda = 0$$

$$(m-1)(m+1) = 0$$

$$m = 1 \text{ or } m = -1$$

$$m < 0$$

$$-2x^2 + 2x + 7 = 0$$

$$x^2 - x - \frac{7}{2} = 0$$

$$x = -1 \times \boxed{x = 1}$$

-8

$$y = a(x-1)^2 + 7 \xrightarrow{x=0} 4a + 7 = 4$$

$$y = -\frac{1}{4}(x-1)^2 + 7$$

$$a = -\frac{1}{4}$$

$$y = -\frac{1}{4}x^2 + \frac{1}{2}x - \frac{1}{4} + 7$$

$$-\frac{1}{4}x^2 + \frac{1}{2}x + \frac{27}{4} = 0$$

$$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{\alpha + \beta}{\alpha\beta} = \frac{4}{-8} = -\frac{1}{2}$$

-9

$$4 - 8a - 8 + 2a^2 + 4a + 2 = 0$$

$$2a^2 - 2a - 2 = 0$$

$$a = 1 \text{ or } a = -1$$

$$\left\{ \begin{array}{l} a = -\frac{1}{2} \Rightarrow p = a + 1 = \frac{1}{2} \\ \quad \quad \quad \alpha = \frac{1}{2} \\ a = 1 \Rightarrow \alpha + 1 = 8 \\ \quad \quad \quad \alpha = 7 \end{array} \right.$$

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