

Subject: ()

عارف سعادت نیا

Date: _____

$$y = a(x-h)^2 + k \rightarrow y = a(x+1)^2 + 9$$

(1)

$$\underline{(3,1)} \quad 1 = a(3+1)^2 + 9 \rightarrow 1 = 16a + 9 \rightarrow 16a = -8 \quad a = -\frac{1}{2}$$

$$y = -\frac{1}{2}(x+1)^2 + 9 \rightarrow y = -\frac{1}{2}x^2 - x + \frac{17}{2} \rightarrow \underline{y = -x^2 - 2x + 17}$$

$$2x^2 + mx + m + 4 = 0 \xrightarrow{\text{درجه دوم}} \Delta > 0, S > 0, P > 0$$

(2)

$$S = \frac{-b}{a} = -\frac{m}{2} > 0 \rightarrow m < 0 \quad (1) \quad P = \frac{c}{a} = \frac{m+4}{2} > 0 \rightarrow m > -4 \quad (2)$$

$$\Delta = b^2 - 4ac = m^2 - 4(2)(m+4) = m^2 - 8m - 32 > 0 \rightarrow (m-12)(m+8) > 0$$

$$m < -8 \quad \text{or} \quad m > 12 \quad (3) \quad (1) \cap (2) \cap (3) = (-4, 0)$$

$$3x^2 + (2m-1)x + 2 - m = 0$$

$$\Delta > 0 \rightarrow (2m-1)^2 - 12(2-m) > 0 \quad (4)$$

$$S = \frac{1}{P} \rightarrow SP = 1 \rightarrow \frac{1-2m}{3} \times \frac{2-m}{3} = 1 \quad \frac{2m^2 - 4m + 2}{9} = 1$$

$$2m^2 - 4m - 7 = 0 \rightarrow \begin{cases} m = \frac{2 \pm \sqrt{40}}{4} \\ m = -1 \end{cases} \quad \text{GGG}$$

$$x^2 - x - 1 = 0 \quad S = 1 \quad P = -1$$

$$\text{پس } S = x_1^2 + x_2^2 + \frac{1}{x_1} + \frac{1}{x_2} =$$

(5)

$$\text{پس } P = \left(x_1^2 + \frac{1}{x_1}\right) \left(x_2^2 + \frac{1}{x_2}\right) = x_1^2 x_2^2 +$$

$$\frac{1}{x_1 x_2} + x_1^2 + x_2^2 = -1 - \frac{1}{-1} + 9 = \frac{22}{1}$$

$$(S^2 - 2PS) + \frac{x_1 + x_2}{x_1 x_2} =$$

$$(1 - 2 \times 1 \times -1) - \frac{1}{-1} = 1 + 2 + 1 = \frac{4}{1}$$

$$\text{پس } \cup \text{ جواب } = x^2 - 5x + 1 = 0 \rightarrow x^2 - \frac{0}{1}x - \frac{22}{1} = 0 \xrightarrow{\Delta}$$

$$\underline{f(x^2 - 0.1x - 22) = 0}$$

$$\left(\sqrt[r]{x^r} + \frac{1}{\sqrt[r]{x^r}} + 1\right)(\sqrt[r]{x^r} - 1) = r\sqrt[r]{x} \rightarrow$$

(5)

$$\left(\frac{\sqrt[r]{x^r} + \sqrt[r]{x^r} + 1}{\sqrt[r]{x^r}}\right)(\sqrt[r]{x^r} - 1) = r\sqrt[r]{x} \quad \underline{x\sqrt[r]{x^r}}$$

$$\left(\frac{\sqrt[r]{x^r}}{a^r} + \frac{\sqrt[r]{x^r}}{ab} + \frac{1}{b^r}\right)\left(\frac{\sqrt[r]{x^r}}{a} - \frac{1}{b}\right) = rx \quad x^r - 1 = rx$$

$$x^r - rx - 1 = 0 \quad \therefore \frac{-b}{a} = r$$

$$\beta = r\alpha \quad \alpha + \beta = \frac{a}{r} \rightarrow a = r\alpha + r\beta$$

(6)

$$\alpha\beta = \frac{c}{r} \rightarrow \alpha(r\alpha) = \frac{c}{r} \rightarrow r\alpha^2 = \frac{c}{r} \rightarrow \alpha^2 = \frac{c}{a}$$

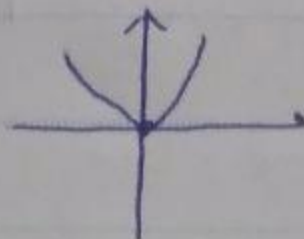
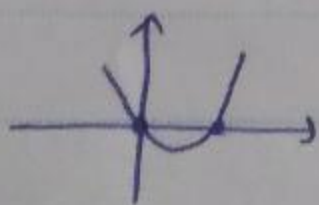
$$\begin{cases} \alpha = \frac{r}{r} \rightarrow \beta = r \rightarrow a = 1 \\ \alpha = -\frac{r}{r} \rightarrow \beta = -r \rightarrow a = -1 \end{cases} \rightarrow 1 - (-1) = 2$$

$$y = ax^r + (r + ra)x = x(ax + r + ra) = 0$$

(7)

$$\begin{cases} x = 0 \\ ax + r + ra = 0 \rightarrow x = -\frac{r + ra}{a} \end{cases}$$

اگر $a > 0$ باشد
نقطه



اگر $a < 0$ باشد (1)

$$(2) \quad \begin{cases} r + ra > 0 \rightarrow \frac{r + ra}{a} > 0 \\ r + ra < 0 \rightarrow \frac{r + ra}{a} < 0 \end{cases}$$

$$(1) \cap (2) = \emptyset$$

مستقیم مماس بر دایره

با مماس مماس

$$a < -\frac{r}{r}$$

$$\frac{-b}{ra} = \frac{-a}{r} = \frac{r}{-r} \rightarrow a = r$$

$$\text{Jawab } a = r - 1 = x_1^r + rx_1 - r \rightarrow x_1^r + rx_1 - r = 0$$

(8)

$$\text{Jawab } a = r - 1 = -x_1^r - rx_1 + b$$

$$x_1^r + rx_1 + (1-b) = 0$$

$$\Delta_r = r^2 - 4(1-b) = r^2 - 4 + 4b = 4b$$

$$(x_1 + r)(x_1 - 1) = 0$$

 $\sqrt{14}$

$$\Delta_1 = r^2 - 4(1-r) = 14 \quad \text{Jawab } = \frac{\pm \sqrt{14}}{1} = \pm \sqrt{14}$$

$$\text{Jawab } = \sqrt{\frac{4b}{111}} = r\sqrt{b} = r \rightarrow \sqrt{b} = r - b = r \rightarrow a \times b = r \times r = 1$$

$$rx^r - ax + b = 0 \quad A \rightarrow \alpha$$

$$rx^r - ax - 9 = 0 \quad B \rightarrow \beta$$

(9)

$$\alpha = r + \frac{1}{r}, \beta = s + \frac{1}{s}$$

$$\alpha + \beta = (r+s) + 1 \quad \alpha\beta = (r+s) \frac{1}{r} + \frac{1}{s} (r+s) + \frac{1}{rs}$$

$$A = \alpha + \beta = -\frac{-a}{r} = \frac{a}{r}$$

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

$$rs = \frac{-9}{ra} = -\frac{r}{a}$$

$$(r+s) + \frac{1}{r}$$

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

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

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

$$A = rx^r - x + b = 0 \rightarrow \alpha + \beta = \frac{1}{r}, \alpha\beta = \frac{b}{r} \quad B = rx^r + x - 9 = 0 \rightarrow s + r = -\frac{1}{r}$$

$$s \times r = -\frac{r}{r} = -1$$

$$\alpha\beta = (r + \frac{1}{r})(s + \frac{1}{s}) = rs + \frac{1}{r} + \frac{1}{s} + \frac{1}{rs}$$

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

$$\alpha\beta = -r - \frac{1}{r} = -\frac{r^2 + 1}{r} \rightarrow \alpha\beta = \frac{b}{r} = -r - b = -r - 9$$

$$\left[\frac{\alpha\beta}{r} \right] = \left[-\frac{1}{r} \right] = -\frac{1}{r}$$

(10)

$$x^r + 9x + m = x^r + 12x - 3m \rightarrow 9x = -3m \rightarrow x = -m$$

$$\text{Jawab } m^r - 9m + m = m^r - 8m = 0 \quad \underline{m \neq 0} \rightarrow m = 0$$

$$m = 0 \text{ Jarak } \begin{cases} x^r + 9x + 0 = 0 \rightarrow x_1 = -1, x_2 = -9 \\ x^r + 12x - 3(0) = 0 \rightarrow x_1 = 3, x_2 = -9 \end{cases}$$

$$9 - (-1) = 10$$