

به هم خاندن رنگین گان



19

یادداشت درس ریاضی

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تاریخ:

$$y = a(x-h)^2 + k$$

1

$$y = a(x+1)^2 + 9$$

$$x=3, y=1$$

$$1 = a(3+1)^2 + 9$$

$$1 = 16a + 9$$

$$-16 = 16a$$

$$a = -\frac{1}{16}$$

$$y = -\frac{1}{16}(x+1)^2 + 9$$

$$y = -\frac{1}{16}x^2 - \frac{1}{16}x + \frac{149}{16}$$

$$y = -\frac{1}{16}x^2 - \frac{1}{16}x + \frac{149}{16}$$

1

$$x^2 + mx + m + 4 = 0 \quad (1)$$

$$\Delta \geq 0 \rightarrow m^2 - 4(m+4) \geq 0$$

$$m^2 - 4m - 16 \geq 0$$

$$-4 \quad 16$$

$$+ \quad - \quad +$$

$$(m+4)(m-16) \geq 0$$

$$-4 \leq m \leq 16$$

$$(m \leq -4) \cup (m \geq 16)$$

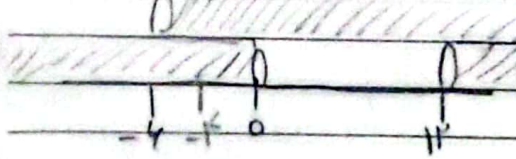
$$-4 \leq m \leq 0 \quad (-4, 0)$$

$$\frac{c}{a} > 0 \rightarrow \frac{m+4}{1} > 0$$

$$m+4 > 0 \rightarrow m > -4$$

$$\frac{-b}{2a} > 0 \rightarrow \frac{-m}{2 \times 1} > 0$$

$$-m > 0 \rightarrow m < 0$$



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$$3 - \text{سه درای ۲ برای صحت} \quad 0 = 2m^2 + (2m-1)m + 2-m$$

دری ۲ را = معادله حاصل از درای ۲

$$-(2m-1) = \frac{a}{c} = \frac{2}{2-m}$$

$$\frac{-2m+1}{2} = \frac{2}{2-m}$$

$$9 = (-2m+1)(2-m)$$

$$9 = -2m + 2m^2 + 2 - m$$

$$9 = 2m^2 - 3m + 2$$

$$2m^2 - 3m - 7$$

$$a+c=b$$

$$m = -1$$

$$m = \frac{-c}{a} = \frac{+7}{2}$$

داری ۲، ۱ صحت

$$m = -1$$

$$\Delta = (2m-1)^2 - 4(2-m)$$

$$2m^2 + 4m - 2$$

$$2-1-2$$

دانش

$$m = \frac{V}{2}$$

$$m = \frac{V}{2}$$

$$2 \times \frac{29}{2} + 1 \times \frac{V}{2} - 2$$

$$29 + 21 - 2$$

دانش



$$x_1, x_2$$

$$x_1^2 - x_2 - 1^2 = 0$$

$$x_1 x_2 = 1^2$$

معادلی

جدید:

$$\left(x_1 + \frac{1}{x_2}\right) \times \left(x_2 + \frac{1}{x_1}\right)$$

$$x_1 + x_2 = +1 = 1$$

$$\underbrace{x_1^2 \times x_2^2}_{(x^2)^2} + \underbrace{x_1^2 \times \frac{1}{x_1}}_{x_1} + \underbrace{\frac{1}{x_2} \times x_2^2}_{x_2} + \underbrace{\frac{1}{x_1} \times x_2}_{\frac{x_2}{x_1}}$$

$$1 - 2(-f) = 1 + 1 = 2$$

$$x_1^2 + x_2^2 + \frac{1}{x_1} + \frac{1}{x_2} \rightarrow \frac{x_1 + x_2}{x_1 x_2} = \frac{1}{-f}$$

$$(x_1 + x_2)(x_1^2 + x_2^2 - ab)$$

$$1 \quad 2 - (-f) = 1^2$$

$$x^2 - \frac{21}{1^2} x - \frac{111}{1^2} = 0$$

معادلی جدید

$$1x^2 - 21x - 111 = 0$$

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

$$t^r - \cancel{t} + 1 - \frac{1}{\cancel{t}} + \cancel{t} - 1 \Rightarrow t^r - \frac{1}{t} = r t^r$$

$$0 = t + \frac{1}{t}$$

$$t^r + 1 = 0$$

$$(t+1)(t^r+1-t) = 0$$

$$t = -1$$

$$t^r + 1 - t = 0$$

$\bar{0} \bar{0} \bar{e}$

$$\Delta = 1 - f(-1)(1) = 1 + f = \delta$$

$$\Delta = \frac{1 \pm \sqrt{\delta}}{r}$$

$$= \left(\frac{1 + \sqrt{\delta}}{r} \right), \left(\frac{1 - \sqrt{\delta}}{r} \right)$$

$\bar{0} \bar{0} \bar{e}$

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



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$$3x^2 - ax + 1 = 0$$

$$\alpha = 3\beta$$

5-6

$$\frac{-b}{a} = \frac{+a}{3}$$

$$\alpha\beta = 3\beta \times \beta = 3\beta^2$$

$$\frac{+a}{3} = \frac{1}{3} + \frac{1}{3}$$

$$3\beta^2 = \frac{1}{3} \rightarrow 9\beta^2 = 1$$

$$9\beta^2 = 1 \rightarrow \beta^2 = \frac{1}{9}$$

$$\beta^2 = \frac{1}{9} \Rightarrow \beta = \pm \frac{1}{3}$$

$$\frac{a}{3} = \frac{1}{3}$$

$$a = 1$$

$$\alpha = 3 \times \pm \frac{1}{3}$$

$$\alpha = \pm 1$$

$$\beta = \pm \frac{1}{3}$$

$$\frac{a}{3} = \frac{-1}{3} = \frac{-1}{3}$$

حالت 2

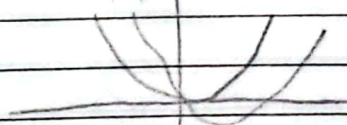
$$a = \frac{-1}{3}$$

$$a = -1$$

☆ نکته: 14

مجموع + c/a
هر دو هم علامت دارند

$$y = ax^2 + (3+2a)x - 7$$



$$ax^2 + 3x + 2a$$

اگر $a > 0$: دایره

if $\Delta = 0$: نقطه ی برشی
مستقیم

دایره

if $\Delta > 0$

$$y = 0 \quad (ax^2 + 3x + 2a)$$

$$ax^2 + 3x + 2a > 0$$

$$\frac{-3 - 2a}{a} > 0$$

$$\frac{3 + 2a}{a} < 0$$



معامله



تاریخ:

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$$\infty \text{ باز} \rightarrow -\frac{r}{2} < a < 0$$

$$\left[-\frac{r}{2}, 0\right)$$

$$y = x^2 + ax - r \rightarrow \infty = \frac{-b}{2a} = \frac{-a}{2}$$

$$y = -x^2 - rx + b \rightarrow \infty = \frac{-b}{2a} = \frac{+r}{2 \times -1} = \frac{r}{-2} = -\frac{r}{2}$$

$$\frac{-a}{2} = -1 \quad \frac{a}{2} = 1 \quad \boxed{a = 2}$$

$$ab = 0 \times 1 = 0$$

$$1 = (-1)^2 - 2(-1) + b$$

$$1 = -1 + 2 + b$$

$$\boxed{0 = b}$$

$$rx^2 - ax + b = 0$$

$$\alpha + \frac{1}{\beta} = \alpha'$$

$$\beta + \frac{1}{\alpha} = \beta'$$

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

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

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

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

$$\frac{a}{r} = -1 \rightarrow \boxed{a = -r}$$

$$rx^2 + ax - 4 = 0$$

$$\alpha'\beta' = \frac{-4}{r} = -\frac{4}{r}$$

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

$$\left(\alpha + \frac{1}{\beta}\right)\left(\beta + \frac{1}{\alpha}\right) = -\frac{4}{r}$$

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

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

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$$\frac{b}{1} + \frac{a}{1} + \frac{1}{1} = -3$$

$$\frac{b}{1} - \frac{1}{1} + \frac{1}{1} = -3$$

$$\frac{b}{1} = -3$$

$$b = -4$$

$$\left[\frac{(-4)(-1)}{1} \right] = \left[1 \frac{1}{1} \right] = 1$$

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

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

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

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

$$x^2 = -2x + 3m$$

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

$$2x + 1m = 0$$

$$2(x + m) = 0$$

$$x^2 + 2x + 3(x) = 0$$

$$x = -m$$

$$x^2 + 2x = 0$$

$$x(x + 2) = 0$$

$$x^2 + 2x - 1d = 0$$

$$3 \times d$$

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

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

$$1 \times d$$

$$(x + 1)(x + d) = 0$$

$$\star \quad 3 - (-1) = 3 + 1 = 4$$