بسم الله الرحمن الرحیم

Date : Subject : ایلیا وصالی کلیپ ۲۲

$x^2 - 5x + 2 = 0 \quad \alpha \cdot \beta = 2 \rightarrow \alpha = \frac{2}{\beta} \quad \left.\begin{matrix} \alpha + \beta = 5 \end{matrix}\right\}$ (۱)

$$\frac{4\alpha + \beta^5}{5\beta^2} = \frac{4\alpha}{5\beta^2} + \frac{\beta^5}{5\beta^2} = \frac{4 \times \frac{2}{\beta}}{5\beta^2} + \frac{\beta^3}{5}$$

$$= \frac{8}{5\beta^3} + \frac{\beta^3}{5} = \frac{1}{5}\left(\frac{8}{\beta^3} + \beta^3\right) = \frac{1}{5}\left(\alpha^3 + \beta^3\right)$$

$$= \frac{1}{5}\left((\alpha+\beta)^3 - 3\alpha\beta(\alpha+\beta)\right) = \frac{1}{5}(5^3 - 3 \times 2 \times 5) = \frac{1}{5} \times 95 = 19$$

(۲)

$y = ax^2 + bx + c$

$(3, -4) \rightarrow -4 = 9a + 3b + c$

$(-1.5, -4) \rightarrow -4 = 2.25a - 1.5b + c$

$\rightarrow 9a + 3b + c = 2.25a - 1.5b + c$

$\rightarrow 6.75a = -4.5b \rightarrow \frac{27}{4}a = -\frac{9}{2}b$

$\rightarrow 27a = -18b \rightarrow -b = \frac{3}{2}a$

رسم ریشه: $-\frac{b}{a} = \frac{\frac{3}{2}a}{a} = \boxed{\frac{3}{2}}$

(۳)

$$\frac{\sqrt{\Delta}}{|a|} = \frac{4}{3}k \rightarrow \frac{\sqrt{4k^2 - 20}}{1} = \frac{4}{3}k$$

$$\rightarrow 4k^2 - 20 = \frac{16}{9}k^2 \rightarrow \frac{20}{9}k^2 = 20 \rightarrow k^2 = 9$$

$$\rightarrow k = \pm 3$$

$$\left[\frac{k^2}{2}\right] = \left[\frac{9}{2}\right] = [4.5] = \boxed{4}$$

PARAMOUNT

Date : Subject :

$y = ax^2 + bx + c$ (۴)

$9a + 3b + c = 25a - 5b + c \rightarrow 8b = 16a \rightarrow b = 2a$

$\alpha + \beta \rightarrow -\frac{b}{a} = \frac{-2a}{a} = -2$

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

$\rightarrow -2\alpha\beta = 1 \rightarrow \alpha\beta = -\frac{1}{2} = \frac{c}{a}$

$\rightarrow c = -\frac{1}{2}a$

$-\frac{\Delta}{4a} = 1 \rightarrow 4ac - b^2 = 4a \qquad 4a$

$4a + 2(-\frac{1}{2}a) - 4a^2 = 4a \rightarrow -2a^2 - 4a^2 = 4a$

$\rightarrow -6a^2 = 4a \rightarrow -2a = 2 \rightarrow a = -\frac{2}{3}$

$b = -\frac{4}{3}$

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

(۵) $-5 - \frac{\sqrt{25+4m}}{-2} < \frac{9}{2}$: بسته بزرگ

$\rightarrow 5 + \sqrt{25+4m} < 9 \rightarrow \sqrt{25+4m} < 4$

$25 + 4m < 16 \rightarrow 4m < -9 \rightarrow m < -\frac{9}{4}$

$\Delta > 0 \rightarrow 25 + 4m > 0 \rightarrow 4m > -25 \rightarrow m > -\frac{25}{4}$

$-\frac{25}{4} < m < -\frac{9}{4}$ $\boxed{-6, -5, -4, -3}$ ۴تا

Date : Subject :

$\frac{-\Delta}{4a} = 2 \rightarrow 4ac - b^2 = 8a \rightarrow 4(3m^2 - m) - 144 = 8m$ (۶)

$24m^2 - 12m - 144 = 0 \longrightarrow \frac{12 \pm \sqrt{144 - 4(-24)(-144)}}{48}$

۳ ✓

$-\frac{12}{3} \times$ $\quad \frac{-b}{2a} = \frac{12}{6} = 2$

↳ ax^2 منفی می‌شود

$a^2 = \alpha\beta \longrightarrow a^2 = \frac{c}{a} \Rightarrow a^2 = 2a - 1$ (۷)

$\rightarrow a^2 - 2a + 1 = 0 \longrightarrow (a-1)^2 = 0 \rightarrow a = 1$

(۸)

$x^2 = t \rightarrow t^2 - 7t - 5 = 0$

$\rightarrow t = \frac{7 \pm \sqrt{69}}{2}$ $\quad x^2 > 0$ $\quad x^2 = \frac{7 + \sqrt{69}}{2}$

$\rightarrow x = \pm\sqrt{\frac{7 + \sqrt{69}}{2}} \longrightarrow S = 0 \quad P = -\frac{7 + \sqrt{69}}{2}$

$2p^2 - 3sp + 3s = 59 + 7\sqrt{69}$

(۵)

$eq1 \Big/ \frac{-b}{2a} = \frac{4}{2k}$

$\frac{-\Delta}{4a} = \frac{-9k - 4}{k}$ $\quad \frac{k}{k} \rightarrow \frac{-9 \times 2 - 4}{2} = -11$

$\frac{-9k - 4}{k} = -4 \times \frac{4}{2k} - 4 \longrightarrow -9k - 4 = -11 - 4k$

$\rightarrow 4 = 2k \rightarrow k = 2$ ✗

PARAMOUNT

۱۰

$-mx^2 + mx + 1 = -m - x$

$-mx^2 + mx + x + m + 1 = 0$

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

$\Delta < 0 \rightarrow m^2 + 2m + 1 - 4(-m^2 - m) < 0$

$\rightarrow m^2 + 2m + 1 + 4m^2 + 4m < 0$

$\rightarrow 5m^2 + 6m + 1 < 0 \rightarrow m^2 + 6m + 5 < 0$

$\rightarrow (m+1)(m+5) < 0 \rightarrow m = -1, -5$

	-1		$-\frac{1}{5}$	
	$+$	0	$-$	0

عدد صحیح