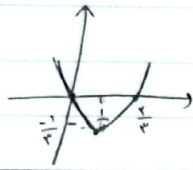


۲۰

آرینا کیسے کر کے ہم بیچیں

(الف)  $k_s = \frac{y}{x} = \frac{1}{4}$      $y_s = 3 \times \frac{1}{4} - \frac{2}{4} = -\frac{1}{4}$      $\begin{array}{c|c|c|c} x & 0 & \frac{1}{4} & \frac{1}{4} \\ \hline y & 0 & -\frac{1}{4} & 0 \end{array}$

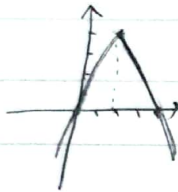
۱-۲



از تالیف ہم نمی گذرد

5

(ب)  $k_s = \frac{-4}{-2} = 2$      $y_s = -4 + 2 = -2$      $\begin{array}{c|c|c|c} x & 0 & 2 & 4 \\ \hline y & 0 & -2 & 0 \end{array}$

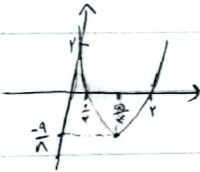


از تالیف ہم نمی گذرد

10

(الف)  $k_s = \frac{5}{4}$      $y_s = 2 \times \frac{5}{4} - \frac{2 \times 5}{4} + 2 = \frac{-9}{4}$      $\begin{array}{c|c|c|c} x & \frac{1}{2} & \frac{5}{4} & \frac{5}{4} \\ \hline y & 0 & -\frac{9}{4} & 0 \end{array}$

۲-۲



از تالیف ادوات نمی گذرد

15

(ب)  $k_s = 2$      $y_s = -4 + 2 - 1 = -3$      $\begin{array}{c|c|c|c} x & 0 & 2 & 4 \\ \hline y & 0 & -3 & -1 \end{array}$



از تالیف ادوات نمی گذرد

20

(الف)  $\alpha + \beta = 1$      $\alpha - \beta = \frac{\sqrt{\Delta}}{|\alpha|} = \frac{\sqrt{13}}{1}$      $\frac{\alpha + \beta}{\alpha - \beta} = \frac{1}{\sqrt{13}} = \frac{\sqrt{13}}{13}$     ۳

(ب)  $\alpha^2 + \beta^2 = 8^2 - 2P = 1 - (4) = -3$

(ج)  $\alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta = 1 - 2(-3) = 7$

(د)  $\alpha^2 - \beta^2 = \frac{(\alpha - \beta)(\alpha + \beta)}{\sqrt{13}} = \frac{(\sqrt{13})(1)}{\sqrt{13}} = 1$

۵

25

چون ساده نموده یک ریشه دارد که همان  $k = 2$  است پس عبارت  $k^2 - ak + a = 0$  ریشه ندارد و ریشه مخالف  $2 < a < 4$  دارد.

$0 < a < 4 \rightarrow a^2 - 4a < 0 \rightarrow a(a - 4) < 0$      $\frac{0}{1-4} < \frac{4}{1-4} \rightarrow 0 < a < 4$      $a \in (0, 4]$     ۴

30

$$n^2 - 5n - \frac{a}{4} = 0$$

$$\rightarrow \alpha^2 - 5\alpha = \frac{a}{4} \quad \alpha^2 + \beta^2 = 14 + \frac{14a}{4}$$

$$2\alpha^2 + \beta^2 - 5a = 14 \rightarrow 14 + a = 14 \rightarrow a = -9$$

$$2n^2 - 10n + 9 = 0$$

$$2(n^2 - 5n + \frac{9}{2}) = 0$$

$$2(n-1)(n-\frac{7}{2}) = 0 \rightarrow n = 1, n = \frac{7}{2}$$

$$\frac{a}{4} = \frac{-9}{4} = -\frac{9}{4}$$

9 - 3

$$n_2 = \frac{10a + 9 + 14 - 14a}{2} = a \rightarrow b = a \quad \text{ii) } (a, \frac{7}{2}) \rightarrow y = a(n-a)^2 + \frac{7}{2}$$

قابلیت  $\rightarrow$   $14 - 2a \geq 1 \rightarrow 13 \geq 2a \rightarrow a \leq 6.5$

$a - 7 \geq 1 \rightarrow a \geq 8$

$A(9, 1), B(1, 1)$

$n = 1 \rightarrow 14a + \frac{7}{2} = 1 \rightarrow a = -\frac{1}{14}$

$$y = -\frac{1}{14}n^2 + \frac{1}{7}n - \frac{1}{14}$$

$$\frac{1}{n} = \dots$$

9 - 4

$$an^2 - an - b = 0 \rightarrow n^2 - n - \frac{b}{a} = 0 \quad a + b = 1$$

$$\alpha^2 = \alpha + \frac{b}{a} \quad \beta^2 = \beta + \frac{b}{a}$$

$$50\beta^2 + 100\alpha^2 - 100\beta = 14 \rightarrow 50\beta + 100\alpha + 100\frac{b}{a} - 100\beta = 14$$

$$100(\alpha + \beta) + 100\frac{b}{a} = 14 \rightarrow 100\frac{b}{a} = -86 \rightarrow \frac{b}{a} = -\frac{43}{50}$$

$$\frac{\sqrt{b}}{|a|} = \sqrt{1 + \frac{b}{a}} = \sqrt{\frac{47}{50}} = \frac{\sqrt{47}}{\sqrt{50}}$$

15

$$n_2 = \frac{-a+1}{2} = -2 \quad y = a(n+2)^2 - \frac{1}{2}$$

$$\frac{100}{2} \left( a - \frac{1}{2} \right) = \frac{1}{2} \rightarrow a = \frac{1}{100}$$

$$n = 1 \rightarrow \beta = \frac{1}{100} \times 9 - \frac{1}{100} = \frac{89}{100}$$

9

18

$$n^2 + 4n + a = 0 \rightarrow n = \frac{-4 \pm \sqrt{16 - 4a}}{2} \rightarrow \alpha < \beta \rightarrow \alpha = \frac{-4 - \sqrt{16 - 4a}}{2}$$

$$\beta = \frac{-4 + \sqrt{16 - 4a}}{2} = -2 + \sqrt{4 - a}$$

$$2\alpha^2 = 4 - 4a + 16\sqrt{4 - a} \quad 2\beta^2 = 4 - 4a - 16\sqrt{4 - a}$$

$$2\alpha^2 + 2\beta^2 = 8 - 8a + 16\sqrt{4 - a} = 16\sqrt{4 - a} + 16 \rightarrow 8 - 8a = 16 \rightarrow a = -1$$

9

25

$$\frac{1}{\sqrt{a}} + \frac{1}{\sqrt{b}} = \omega \rightarrow \frac{\sqrt{a} + \sqrt{b}}{\sqrt{ab}} = \omega \quad \alpha\beta = \frac{1}{4} \rightarrow \sqrt{\alpha\beta} = \frac{1}{2}$$

$$(\sqrt{a} + \sqrt{b})^2 = \frac{a+b}{\frac{m+16}{4}} + \frac{2\sqrt{ab}}{\frac{1}{4}} = \frac{m+16}{4} + 8 \rightarrow \sqrt{a} + \sqrt{b} = \frac{\sqrt{m+16}}{2}$$

$$\rightarrow \frac{\sqrt{m+16}}{2} = \omega \rightarrow \sqrt{m+16} = 2\omega$$

$$m+16 \geq 16 \rightarrow m \geq 0 \rightarrow -n^2 + 4n + 16 = 0 \rightarrow \frac{c}{a} = -1$$

9

30