

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره 19 کلاس: ریاضیات

$$B = 3\alpha$$

$$\alpha + B = \frac{K}{P} \Rightarrow \alpha = \frac{K}{P} - 3\alpha$$

$$\alpha B = \frac{K}{P} \Rightarrow \alpha(3\alpha) = \frac{K}{P} \Rightarrow 3\alpha^2 = \frac{K}{P} \Rightarrow \begin{cases} \alpha = \frac{\sqrt{K}}{\sqrt{P}} \Rightarrow \beta = 3 \Rightarrow \alpha = 1 \\ \alpha = -\frac{\sqrt{K}}{\sqrt{P}} \Rightarrow \beta = -3 \Rightarrow \alpha = -1 \end{cases}$$

$$\alpha_1 - \alpha_2 = 1 - (-1) = 2$$

$$34\alpha^2 - (m+1)\alpha + 1 = 0 \Rightarrow \sqrt{\frac{1}{\alpha}} + \sqrt{\frac{1}{\beta}} = S$$

$$\left(\frac{1}{\alpha} + \frac{1}{\beta}\right) + 2\sqrt{\frac{1}{\alpha\beta}} = 2S \Rightarrow (m+1) + (1) = 2S \Rightarrow S = \frac{m+1}{2} \Rightarrow \frac{1}{\alpha} + \frac{1}{\beta} = \frac{m+1}{2}$$

$$m+1 = 1 \Rightarrow m = 0 \quad P = \frac{1}{4}$$

$$m\alpha^2 + 3\alpha + 1 = 0 \Rightarrow P = \frac{1}{m} = -2$$

$$F\alpha^2 + K\alpha - 9\alpha - 1 = 0$$

$$S = 1 \quad \begin{cases} \alpha^2 - \alpha - 1 = 0 \\ P = -1 \end{cases} \Rightarrow$$

$$\alpha^2 - \alpha = F\alpha^2 + K\alpha - 9\alpha \Rightarrow \alpha(\alpha - 1) = \alpha(F\alpha + K - 9)$$

$$\Rightarrow F\alpha^2 + \alpha(K - 1) - 1 = 0$$

$$\alpha\beta = -\frac{1}{F} = -1 \quad S = \frac{-K+1}{F} = 1 \Rightarrow -K+1 = F \Rightarrow K = 1 - F$$

$$\alpha^2 + 2\alpha + 2\beta^2 = S^2 - 2P \Rightarrow (4) - 2 \Rightarrow 24 - 2a$$

$$\alpha = -\frac{1}{2} \sqrt{9-a}$$

$$\beta = -\frac{1}{2} \sqrt{9-a}$$

$$9 + (9-a) + 4\sqrt{9-a} + 2 \frac{(24-2a)}{\sqrt{2}-\sqrt{a}} = 14\sqrt{2} + 18$$

$$9 - a + 4\sqrt{9-a} = 14\sqrt{2} + 18 \Rightarrow a - 2a + 4\sqrt{9-a} = 14\sqrt{2} \Rightarrow 14\sqrt{9-a} = 14\sqrt{2} \Rightarrow 9-a = 2 \Rightarrow a = 7$$

$$\alpha^2 - 7\alpha^2 - 5 = 0 \Rightarrow$$

$$2P^2 - 7SP + 1S$$

$$\Rightarrow \alpha = t \Rightarrow t^2 - 7t - 5 = 0 \Rightarrow \Delta = 49 + 20 = 69$$

$$t_1 = \frac{7 + \sqrt{69}}{2} > 0$$

$$t_2 = \frac{7 - \sqrt{69}}{2} < 0$$

$$\alpha^2 = t = \frac{7 + \sqrt{69}}{2} \Rightarrow \alpha_1, \alpha_2 = \pm \sqrt{\frac{7 + \sqrt{69}}{2}} \Rightarrow S = 0$$

$$2P^2 = 2 \left(\frac{49 + 49 + 14\sqrt{69}}{2} \right) \cdot P \Rightarrow \frac{112 + 14\sqrt{69}}{2} \Rightarrow 56 + 7\sqrt{69}$$

Step 1: $z = x + \frac{1}{x}$

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Step 2: $z = x - \frac{1}{x}$

$$x = z + \frac{1}{x}$$

$$z = x - \frac{1}{x}$$

$$\Rightarrow 2ax(x - \frac{1}{x})^2 + a(x - \frac{1}{x}) - 4 = 2ax^2 - ax - 4$$

$$\Rightarrow \begin{cases} 2ax^2 - ax - 4 = 2ax^2 - ax - 4 \\ 2ax^2 - ax - 4 = 0 \end{cases} \Rightarrow \begin{cases} \frac{a}{x} = -1 \\ \frac{a}{x} = -1 \end{cases} \Rightarrow \begin{cases} a = -x \\ a = -x \end{cases} \Rightarrow \begin{cases} a = -1 \\ a = -1 \end{cases}$$

$$\left[\frac{ab}{x} \right] = -1$$

$$ax^2 - ax - b = 0 \Rightarrow \begin{cases} a+b=1 \\ b=1-a \end{cases} \Rightarrow \begin{cases} a = \frac{1}{2} \\ b = \frac{1}{2} \end{cases}$$

$$K_0 B^2 + 2K_0 x^2 - 2K_0 B = 14$$

$$K_0 (1-x)^2 + 2K_0 x^2 - 2K_0 (1-x) = 14 \Rightarrow 4K_0 x^2 - 4K_0 x + K_0 = 0 \Rightarrow \begin{cases} S=1 \\ P=\frac{1}{K_0} \end{cases}$$

$$|AB| = \sqrt{S^2 - 4P} = \frac{2}{\sqrt{K_0}}$$

$$x^2 - (a+1)x + a = 0 \rightarrow \text{محل های } x \rightarrow 2K+1, 2K-1$$

$$x^2 - (a+1)x + b = 0 \rightarrow \text{محل های } x \rightarrow 2K', 2K'+1$$

$$a = (2K+1) \times (2K-1) = 4K^2 - 1 \Rightarrow \begin{cases} 4K^2 - 4K = 0 \\ 4K(K-1) = 0 \end{cases} \Rightarrow \begin{cases} K=1 \\ K=0 \end{cases} \Rightarrow a=0$$

$$b = 4K^2 + 4K' \Rightarrow \begin{cases} a+1 = 4K^2 + 1 \\ a+1 = 4K^2 + 1 \end{cases} \Rightarrow b = 4K^2 \Rightarrow |a-b| = |1-4K^2| = 4$$

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

$$S^2 - 4P = (-1)^2 - 4(- (1+m^2)) = 1 + 4 + 4m^2 = 5 + 4m^2 \Rightarrow m=0 \Rightarrow \begin{cases} x^2 + B^2 = 4 \end{cases}$$

$$\frac{x+B}{x} = \frac{-a+K}{x} = -1$$

$$S = -1 \Rightarrow \begin{cases} x = -1 \\ x = -1 \end{cases}$$

$$x^2 + B^2 = 4 \Rightarrow (x+B)^2 - 2x B = 4$$

$$x B = -1$$

$$y = a(x^2 + 2x - \frac{1}{x}) \Rightarrow 1 = a(1 - 2 - \frac{1}{x}) \Rightarrow a = -\frac{x}{x-1} \Rightarrow y = -\frac{x}{x-1} \Rightarrow y = \frac{1}{x-1}$$

