


نام و نام خانوادگی علی جباری پاسخنامه تشریحی تکلیف شماره ۲۵ کلاس ۲۵

۱۹, ۷۵

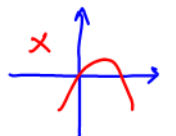
الف) $y = 3x^2 - 2x$ $a > 0 \Rightarrow$ دارد min و $3x^2 - 2x = 0 \Rightarrow x(3x - 2) = 0 \Rightarrow x = \left\{ \frac{0}{3}, \frac{2}{3} \right\} \Rightarrow$



از ناحیه ۳ نمی‌گذرد ✓

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ب) $y = -x^2 + 4x$ $a < 0 \Rightarrow$ دارد max و $-x^2 + 4x = 0 \rightarrow x(4 - x) = 0 \Rightarrow x = \left\{ \frac{0}{1}, \frac{4}{1} \right\} \Rightarrow$



از ناحیه ۲ نمی‌گذرد ✓

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الف) $y = 2x^2 - 5x + 2 \rightarrow a > 0 \Rightarrow$ دارد min $y(0) = 2$ $x = \frac{5 \pm \sqrt{25 - 16}}{4} = \left\{ \frac{2}{4}, \frac{3}{4} \right\} \Rightarrow$



از ناحیه ۱, ۲, ۳ ✓

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ب) $y = -x^2 + 4x - 1 \rightarrow a < 0 \Rightarrow$ دارد max $y(0) = -1$ $P = 1$
 $S = 4 \Rightarrow$ هر دو ریشه \Rightarrow



از ناحیه ۱, ۳, ۴ ✓

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$x^2 - x - 3 = 0$ $S = -\frac{b}{a} = 1$ $P = \frac{c}{a} = -3$ $\alpha - \beta = \frac{\pm \sqrt{\Delta}}{a} = \pm \sqrt{13}$ $\alpha - \beta = \frac{\sqrt{\Delta}}{|\alpha|}$ دقت!

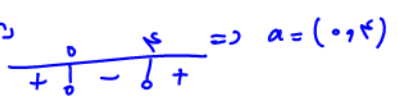
الف) $\frac{\alpha + \beta}{\alpha - \beta} = \frac{1}{\pm \sqrt{13}} = \pm \frac{\sqrt{13}}{13}$ ب) $\alpha^2 + \beta^2 = S^2 - 2P = 1 + 6 = 7$ ✓

۱, ۷۵

ج) $\alpha^3 + \beta^3 = S^3 - 3SP = 1 - (-9) = 10$ ✓ د) $\alpha^3 - \beta^3 = (\alpha - \beta)(\alpha^2 + \alpha\beta + \beta^2) = (\pm \sqrt{13})(-3 + 7) = \pm 4\sqrt{13}$

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$(x - 2)(x^2 - ax + a) = 0$
 $\Rightarrow x = 2 \Rightarrow \Delta < 0$ یا $x = 2$
 $\rightarrow b^2 - 4ac < 0 \rightarrow a^2 - 4a < 0 \rightarrow$



$\Rightarrow a = (0, 4)$ ✓

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$3x^2 - 12x - a = 0$ $S = -\frac{b}{a} = 4$ $P = \frac{c}{a} = -\frac{a}{3}$ $3x^2 - 12x - a = 0 \Rightarrow 3(\alpha^2 - 4\alpha) = a \Rightarrow \alpha^2 - 4\alpha = \frac{a}{3}$

$2\alpha^2 + \beta^2 - 4\alpha = 7 \Rightarrow \alpha^2 - 4\alpha + \alpha^2 + \beta^2 = 7 \rightarrow \frac{a}{3} + (\alpha^2 + \beta^2) = 7 \rightarrow \frac{a}{3} + (4^2 - 2(\frac{-a}{3})) = 7$

$19 + \frac{2a}{3} = 7 \Rightarrow a = -9$

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$3x^2 - 12x + 9 = 0 \rightarrow x^2 - 4x + 3 = 0 \rightarrow x = \left\{ \frac{3}{1}, \frac{1}{1} \right\} \Rightarrow \frac{a}{3} = -\frac{9}{3} = -3$ ✓

$$y_B = y_A \Rightarrow x_S = \frac{x_A + x_B}{2} = \frac{r + r + v - r}{2} = \frac{v}{2} = \Delta \quad S(b, b-r) \Rightarrow b=0 \Rightarrow S(0, r)$$

$$y_A \in \mathbb{N} : a-r \geq 1 \Rightarrow a \geq r \quad \cap \quad x_B \in \mathbb{N} : v-r \geq 1 \Rightarrow r \leq v \Rightarrow a \leq r = a=r \Rightarrow B(1,1)$$

$$S(h, k) : y = c(x-h)^r + k \rightarrow y = c(x-0)^r + r \xrightarrow{B(1,1)} 1 = c(-1)^r + r = (c+r) \Rightarrow c = -\frac{1}{\lambda}$$

$$\Rightarrow y = -\frac{1}{\lambda}(x-0)^r + r \quad x=0 \rightarrow y = -\frac{1}{\lambda} \cdot 0 + r = -\frac{1}{\lambda} \Rightarrow 0 - (-\frac{1}{\lambda}) = \frac{1}{\lambda} \checkmark$$

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$$ax^r - ax - b = 0 \quad S = \alpha + \beta = -\frac{-a}{a} = 1 \Rightarrow \alpha = 1 - \beta$$

$$\leftarrow \beta \cdot \beta^r + r \cdot (1-\beta)^r - r \cdot \beta = 1v \rightarrow \beta \cdot \beta^r + r(1-r\beta + r^2\beta^r) - r \cdot \beta = 1v \rightarrow \beta \cdot \beta^r - r \cdot \beta + r = 0$$

$$\rightarrow r \cdot \beta^r - r \cdot \beta + 1 = 0 \xrightarrow{\beta=1-\alpha} r \cdot \alpha^r - r \cdot \alpha + 1 = 0 \Rightarrow r \cdot \alpha^r - r \cdot \alpha + 1 = 0 \rightarrow x = \sqrt[r]{\frac{1}{r}}$$

$$|\alpha - \beta| = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{r \cdot r}}{r} = \frac{r\sqrt{0}}{\Delta} \checkmark$$

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$$y_1 = y_r \Rightarrow x_S = \frac{-\Delta + 1}{2} = -r \Rightarrow S(-r, -\frac{1}{r}) \quad y = a(x - x_S)^r + y_S \Rightarrow y = a(x+r)^r - \frac{1}{r}$$

$$\frac{v}{r} = a(0+r)^r - \frac{1}{r} \Rightarrow \frac{v}{r} + \frac{1}{r} = fa \Rightarrow r = fa \Rightarrow a = \frac{1}{r} \Rightarrow y = \frac{1}{r}(x+r)^r - \frac{1}{r}$$

$$\xrightarrow{(1, \beta)} \beta = \frac{1}{r}(1+r)^r - \frac{1}{r} = f \checkmark$$

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$$x^r + 9x + a = 0 \rightarrow S = -9 \quad \cap \quad P = a$$

$$r\alpha^r + r\beta^r = r(\alpha^r + \beta^r) + \alpha^r = r(r - ra) + a^r = 12\sqrt{r} + 10$$

$$r(r - ra) + a^r = 12\sqrt{r} + 10 \Rightarrow \sqrt{r} - fa + a^r = 12\sqrt{r} + 10 \Rightarrow a^r - fa = 12\sqrt{r} + 10$$

$$\alpha^r + 9\alpha + a = 0 \Rightarrow \alpha = -\alpha^r - 9\alpha \rightarrow \alpha^r - 9(-\alpha^r - 9\alpha) = 12\sqrt{r} + 10$$

$$\Delta \alpha^r + r\alpha - (10 + 12\sqrt{r}) = 0 \rightarrow \Delta = r - r - (10 - 12\sqrt{r}) = 12\sqrt{r} + r - 10$$

$$\Delta' = \left(\frac{b}{a}\right)^r - ac : \Delta' = r \cdot 9 + 9\sqrt{r} = (r + 1.5\sqrt{r})^2 \quad \sqrt{\Delta'} = r + 1.5\sqrt{r} \rightarrow \alpha = \frac{-r \pm (r + 1.5\sqrt{r})}{\Delta} \alpha < 0 \rightarrow \alpha = -r - 1.5\sqrt{r}$$

$$\alpha = \alpha\beta = 9 \cdot 1 = 9$$

$$\beta = -9\alpha = 12\sqrt{r} - 9$$

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$$\left(\frac{1}{\sqrt{\alpha}} + \frac{1}{\sqrt{\beta}}\right)^r = r\Delta \Rightarrow \frac{1}{\alpha} + \frac{1}{\beta} + r \frac{1}{\sqrt{\alpha\beta}} = r\Delta \Rightarrow \frac{\alpha + \beta}{\alpha\beta} + \frac{r}{\sqrt{\alpha\beta}} = r\Delta \Rightarrow \frac{S}{P} + \frac{r}{\sqrt{P}} = r\Delta$$

$$S = \frac{m+1f}{rs} \quad P = \frac{1}{rs} \Rightarrow \sqrt{P} = \frac{1}{r} \Rightarrow \frac{\frac{m+1f}{rs}}{\frac{1}{rs}} + \frac{r}{\frac{1}{r}} = r\Delta \rightarrow m+1f+12 = r\Delta \Rightarrow m = -1$$

$$m x^r + r x + r = 0 \xrightarrow{m=-1} -x^r + r x + r = 0 \rightarrow P' = \frac{S}{a} = -r \checkmark$$

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