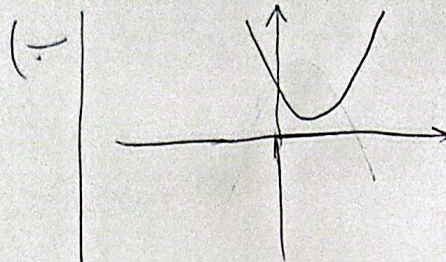
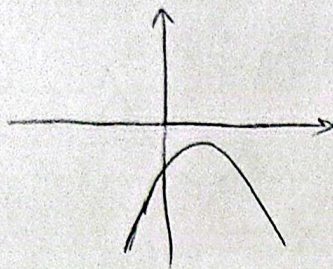


بازدهم B

تکلیف ۱۲

محمد امین جعفری



الف ۱

$$\Delta = (m+1)^2 - 4\left(\frac{m}{2} + 2\right) = m^2 + 2m + 1 - 2m - 8 = m^2 - 7$$

$$= m^2 - 7 = (m - \sqrt{7})(m + \sqrt{7}) \geq 0 \Rightarrow m \leq -\sqrt{7} \text{ or } m \geq \sqrt{7}$$

الف ۲

$$\Delta = (m+1)^2 - 4\left(\frac{m}{2} + 2\right) = m^2 + 2m + 1 - 2m - 8 = m^2 - 7$$

$$= m^2 - 7 = (m - \sqrt{7})(m + \sqrt{7}) > 0 \Rightarrow \frac{-\sqrt{7}}{+} < \frac{+\sqrt{7}}{+}$$

$$\Rightarrow m \in (-\infty, -\sqrt{7}) \cup (\sqrt{7}, +\infty)$$

ب

$$\Delta = (m+1)^2 - 4\left(\frac{m}{2} + 2\right) = m^2 + 2m + 1 - 2m - 8 = m^2 - 7$$

$$= m^2 - 7 = (m - \sqrt{7})(m + \sqrt{7}) \geq 0 \Rightarrow \frac{-\sqrt{7}}{+} < \frac{+\sqrt{7}}{+}$$

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ج

$$\Delta = (m+1)^2 - 4\left(\frac{m}{2} + 2\right) = m^2 + 2m + 1 - 2m - 8 = m^2 - 7$$

$$= m^2 - 7 = (m - \sqrt{7})(m + \sqrt{7}) < 0 \Rightarrow \frac{-\sqrt{7}}{+} < \frac{+\sqrt{7}}{+}$$

$$\Rightarrow m \in (-\sqrt{7}, \sqrt{7})$$

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$$\Delta > 0 \Rightarrow (-2(m+1))^2 - 4(m-2)(1) = 4m^2 + 8m + 4 - 4m + 8 = 4m^2 + 4m + 12 > 0$$

$$\Rightarrow m^2 + m + 3 = (m - (-1/2))^2 + 11/4 > 0 \Rightarrow m \in \mathbb{R} \text{ ①}$$

$$S < 0 \Rightarrow \frac{2(m+1)}{m-2} < 0 \Rightarrow \frac{-1}{+} < \frac{+}{+} \Rightarrow m \in (-1, 2) \text{ ②}$$

$$P > 0 \Rightarrow \frac{1}{m-2} > 0 \Rightarrow m-2 > 0 \Rightarrow m > 2 \text{ ③}$$

① ∧ ② ∧ ③ $\Rightarrow m \in \emptyset$

ب

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$$\Delta > 0 \Rightarrow m \in \mathbb{R} \text{ ①}$$

$$S < 0 \Rightarrow \frac{2(m+1)}{m-2} < 0 \Rightarrow \frac{-1}{+} < \frac{+}{+} \Rightarrow m \in (-1, 2) \text{ ②}$$

$$P < 0 \Rightarrow \frac{1}{m-2} < 0 \Rightarrow m-2 < 0 \Rightarrow m < 2 \text{ ③}$$

① ∧ ② ∧ ③ $\Rightarrow m \in (-1, 2)$

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$$\Rightarrow \Delta > 0 \Rightarrow (-2(m+1))^2 - 4(m-2)(1) = 4m^2 + 8m + 4 - 4m + 8 = 4m^2 + 4m + 12$$

$$= 4(m^2 + m + 3) > 0 \Rightarrow m^2 + m + 3 = (m - (-1/2))^2 + 11/4 > 0 \Rightarrow m \in \mathbb{R}$$

ب

$$-\frac{b}{2a} = \frac{2(m+1)}{2(m-2)} = \frac{m+1}{m-2} = -1 \Rightarrow -2m + 4 = m + 1 \Rightarrow 3m = 3 \Rightarrow m = 1$$

و

$$\Delta \geq 0 \Rightarrow \left(2 \sin \alpha\right)^2 - 4\left(\frac{1}{4}\right)\left(\frac{1}{4}\right) = 4 \sin^2 \alpha - 1 = 4(\sin^2 \alpha - 1) \geq 0$$

$$\Rightarrow \sin^2 \alpha - 1 \geq 0 \Rightarrow \sin^2 \alpha \geq 1 \Rightarrow \sin \alpha = \pm 1$$

$$\left\{ \begin{array}{l} \sin \alpha = 1 \Rightarrow \frac{1}{4}n^2 - 2n + \frac{1}{4} = 0 \Rightarrow n = \frac{2 \pm \sqrt{4 - 4\left(\frac{1}{4}\right)\left(\frac{1}{4}\right)}}{\frac{1}{2}} = \frac{2}{\frac{1}{2}} = 4 \\ \sin \alpha = -1 \Rightarrow \frac{1}{4}n^2 + 2n + \frac{1}{4} = 0 \Rightarrow n = \frac{-2 \pm \sqrt{4 - 4\left(\frac{1}{4}\right)\left(\frac{1}{4}\right)}}{\frac{1}{2}} = \frac{-2}{\frac{1}{2}} = -4 \end{array} \right.$$

$$y = \frac{(r_n^r - r_{n-1})(r_n^r - r_{n-2})}{1 - r^r} = \frac{(n-1)(r_{n+1})(n+1)(r_n - a)}{(1-n)(n+1)} = -(r_{n+1})(r_n - a)$$

$$= -4n^r + 1r_n + a \Rightarrow \frac{-\Delta}{\epsilon a} = \frac{179 - r(-4)(a)}{-r(-4)} = \frac{179 + 1r}{4r} = \frac{r179}{4r}$$

$$r_s = \Delta p + V \Rightarrow \frac{r(m+r)}{m} = \frac{a(-r)}{m} + V \Rightarrow r_m + r = -1 + Vm \Rightarrow m = r$$

$$\Rightarrow \begin{cases} s = \frac{m+r}{m} = \frac{r}{r} = 1 \\ p = -\frac{r}{m} = -\frac{r}{r} = -1 \end{cases} \quad \alpha r + \beta r = s^r - r p = \left(\frac{r}{r}\right)^r - r(-1) = \frac{r}{r} + 1 = \frac{1r}{r}$$

$$\beta^a = (\beta^r)^r = \beta(a\beta - r) = \beta(r a \beta^r - r \cdot \beta + r) = \beta(r a (a\beta - r) - r \cdot \beta + r) = \beta(1r a \beta - a \cdot -r \cdot \beta + r)$$

$$= \beta(1 \cdot a \beta - r) = 1 \cdot a \beta^r - r \cdot \beta = 1 \cdot a(a\beta - r) - r \cdot \beta = a r a \beta - r 1 - r \cdot \beta = r v 9 \beta - r 1$$

$$\alpha + \beta = a \Rightarrow \alpha = a - \beta \Rightarrow r \alpha = r(a - \beta) = r \cdot -r \beta \Rightarrow r \alpha + \beta^a = r \cdot -r \beta + r v 9 \beta - r 1 = r v 9 \beta - r 1$$

$$\Rightarrow \frac{r \alpha + \beta^a}{a \beta^r} = \frac{r v 9 \beta - r 1}{a(a\beta - r)} = \frac{r a(a\beta - r)}{a(a\beta - r)} = \frac{r a}{a} = 19$$

$$(1, r) \rightarrow C = r \Rightarrow y_1 = a n^r + b n + r \quad y_1 = y_r \Rightarrow a n^r = b n + r = r n + 1 \Rightarrow a n^r + (b-r)n - r = 0$$

$$\begin{cases} n=r \rightarrow (a + r b - r - r = 0 \Rightarrow r a + b = a \\ n=r \rightarrow r a - r b + r - r = 0 \Rightarrow b = r a \end{cases} \Rightarrow a a, a \Rightarrow a = 1 \Rightarrow b = r$$

$$\Rightarrow \frac{-b}{r a} = \frac{-r}{r}$$

$$y = r n^r + (m+1)n + m + r = n \Rightarrow r n^r + m n + m + r = n \xrightarrow{\Delta = 0} m^r - r(r)(m+r) = m^r - 1 m + 1$$

$$= (m-1r)(m+r) = 0 \Rightarrow m = \begin{cases} -r \\ 1r \end{cases}$$