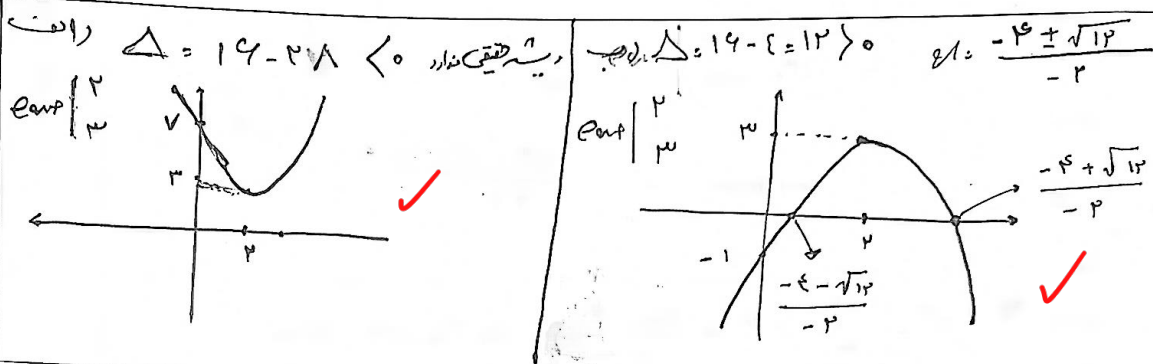


نام و نام خانوادگی کلاس شماره ۱۲



$\Delta = (m+1)^2 - 4(2)(\frac{1}{2}m+2) = m^2 + 2m + 1 - 4m - 16 = m^2 - 2m - 15 = (m-5)(m+3)$

الف) $\Delta > 0 \rightarrow m^2 - 2m - 15 > 0 \rightarrow (-\infty, -3) \cup (5, +\infty)$ ✓

ب) $\Delta = 0 \rightarrow m^2 - 2m - 15 = 0 \rightarrow m = 5 \text{ یا } -3 \rightarrow m = \{5, -3\}$ ✓

ج) $\Delta < 0 \rightarrow m^2 - 2m - 15 < 0 \rightarrow m = (-3, 5)$ ✓

د) $\Delta \geq 0 \rightarrow m^2 - 2m - 15 \geq 0 \rightarrow m = (-\infty, -3] \cup [5, +\infty)$ ✓

الف) $\Delta > 0 \rightarrow (-2(m+1))^2 - 4(m-2)(1.0) > 0 \rightarrow 4(m^2 - 8m + 21) > 0$

$p > 0 \rightarrow \frac{1.0}{m-2} > 0 \rightarrow m-2 > 0 \rightarrow m > 2$

$\Delta < 0 \rightarrow \frac{2(m+1)}{m-2} < 0 \rightarrow \frac{-1}{+} \frac{2}{-} \rightarrow 1 < m < 2$

$\Rightarrow$ برای هیچ مقدار بیقراری باشد ✓

ب) $\Delta > 0 \checkmark \quad p < 0 \rightarrow \frac{1.0}{m-2} < 0 \rightarrow m < 2$

$\Rightarrow -1 < m < 2$ ✓

چون محور تقاطع ریشه ها از راست روی محور باشد پس ریشه حقیقی باشد تا شرط فاصله ریشه ها برقرار شود.

الف) چون عرض از مبدأ عددی مثبت است کافی است که ریشه دوم به پایین باشد تا از هر ۲ ناصیه بگذرد.

$\Rightarrow a < 0 \rightarrow m-2 < 0 \Rightarrow m < 2$ ✓

ب) $x_1 = -2 \rightarrow \frac{2(m+1)}{2(m-2)} = -2 \Rightarrow 2m+2 = -4m+8 \Rightarrow 6m = 6 \Rightarrow m = 1$ ✓

$\Delta \geq 0 \rightarrow (-2 \sin \alpha)^2 - 4(\frac{2}{3})(\frac{3}{2}) \rightarrow 4 \sin^2 \alpha - 4 \geq 0 \rightarrow 4 \sin^2 \alpha \geq 4$

$\rightarrow \sin^2 \alpha \geq 1 \Rightarrow \begin{cases} \sin \alpha = 1 \\ \sin \alpha = -1 \end{cases} \Rightarrow \Delta = 0$

$\sin \alpha = 1 \rightarrow \frac{2}{3}a^2 - 2a + \frac{3}{2} = 0 \Rightarrow a = \frac{2}{3} = \frac{4}{6} = 1, 5$ ✓

$\sin \alpha = -1 \rightarrow \frac{2}{3}a^2 + 2a + \frac{3}{2} = 0 \Rightarrow a = \frac{-2}{\frac{2}{3}} = \frac{-4}{2} = -2, 5 \times$

$$(P_{a1}^r - P_{a1} - 1)(P_{a1}^r - P_{a1} - \omega) : 9a1^r - 1P_{a1}^r - 11a1^r + 1P_{a1} + \omega$$

$$\begin{array}{r} 9a1^r - 1P_{a1}^r - 11a1^r + 1P_{a1} + \omega \\ -9a1^r + 9a1^r \\ \hline -1P_{a1}^r - \omega a1^r + 1P_{a1} + \omega \\ + 1P_{a1}^r - 1P_{a1} \\ \hline -\omega a1^r + \omega \\ + \omega a1^r - \omega \\ \hline 0 \end{array}$$

$$\Rightarrow \text{max} = \frac{-\Delta}{f_{a1}} = \frac{(1P)^r - f(-9)(\omega)}{9f} = \frac{P \wedge 9}{9f}$$

$$P \beta - \omega p = V \Rightarrow \frac{P_{m+9}}{m} - \frac{-1}{m} = V \Rightarrow \frac{P_{m+19}}{m} = V \Rightarrow P_{m+19} = Vm$$

$$P: \frac{-b}{a} = \frac{m+9}{m}, P: \frac{-r}{m} \xrightarrow{m=r} P: \frac{9}{r} = \frac{P}{r} \quad P: \frac{-r}{r} = \frac{-1}{r}$$

$$\alpha + \beta: P - 2P = \left(\frac{P}{r}\right)^r - 2\left(\frac{-1}{r}\right) = \frac{9}{r} + 1 = \frac{1P}{r}$$

$$P = \alpha + \beta, \omega \rightarrow \alpha = \omega - \beta \rightarrow P\alpha = P\omega - P\beta \quad \frac{P\alpha + \beta\omega}{\omega\beta^r} = \frac{-P\beta + \beta\omega + P\omega}{\omega\beta^r}$$

$$\beta^r - \omega\beta + P\omega = 0 \rightarrow \beta^r = \omega\beta - P$$

$$\rightarrow \frac{-P\beta + \beta\omega + P\omega}{\omega\beta^r} = \frac{\beta(\beta^r - P) + P\omega}{P\beta^r} \quad \beta^r = (\beta^r)^r = (\omega\beta - P)^r = (P\omega\beta^r + \omega - P\beta)$$

$$\rightarrow P\omega(\omega\beta - P) + \omega - P\beta = 1\omega\beta - P\omega \rightarrow \beta(\beta^r - P) = \beta(1\omega\beta - \omega) \quad \frac{P\omega\beta - P\omega + P\omega}{\omega(\omega\beta - P)} = \frac{19(P\omega\beta - P\omega)}{P\omega\beta - P\omega} = 19$$

$$1 \text{ حرف از مبدا} = C : f \rightarrow y = a a1^r + b a1 + f$$

$$a1 = P \rightarrow P a + P b + P = P + 1 \rightarrow P a + P b = 10 \quad b = P a \rightarrow 10 a = 10 \Rightarrow a = 1$$

$$a1 = -P \rightarrow P a - P b + P = -P + 1 \rightarrow P a - P b = -9 + 1 \rightarrow P a - P b = -8 \rightarrow b = P a \rightarrow P a - P a = -8 \Rightarrow b = P$$

$$y: a1^r + P a1 + P \quad \text{نقطه} = \frac{-b}{P a} = \frac{-P}{P} = -1, \omega$$

$$\text{نقطه} = a1 = -1, \omega$$

$$P a1^r + (m+1) a1 + m+9 = a1 \rightarrow P a1^r + m a1 + a1 + m+9 - a1 = 0 \rightarrow P a1^r + m a1 + m+9 = 0$$

$$\Rightarrow \Delta = 0 \rightarrow m^2 - \Lambda m - P\Lambda = 0 \rightarrow m = \frac{\Lambda \pm \sqrt{\Lambda^2 + 4P\Lambda}}{2} = \frac{\Lambda \pm 19}{2}$$

$$\rightarrow \begin{cases} m = 1P \times \\ m = -\epsilon \checkmark \end{cases} \rightarrow P a1^r = \frac{-b}{P a} = \frac{-(m+1)}{P} > 0 \rightarrow m+1 < 0 \rightarrow m < -1$$

$$\Rightarrow m = -P$$