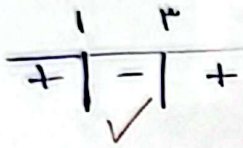


$$K(\alpha-1)(\alpha-3) = \alpha^2 - a\alpha + b$$

$$\rightarrow K=1 \Rightarrow \alpha^2 - 4\alpha + 3$$

$$\left. \begin{array}{l} a=4 \\ b=3 \end{array} \right\} a+b = 7$$

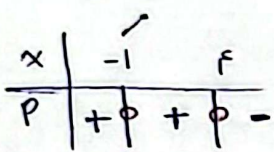


2

$$((K-2)\alpha + m-1)(\alpha-3n)^2$$

ریشه مخالف  $= -1 \Rightarrow -1 - 3n = 0 \Rightarrow 3n = -1 \Rightarrow n = -\frac{1}{3}$

تنها K می تواند باشد زیرا باید به ازای  $\alpha$  بزرگ تر از م منفی باشد (K عددی طبیعی است)



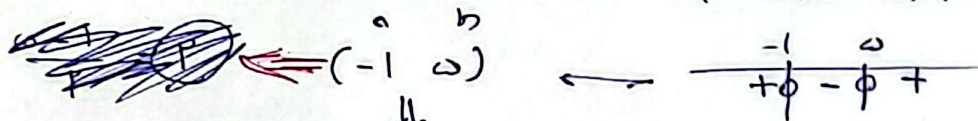
$$-\alpha + m - 1 = -4 + m - 1 = m - 5$$

$$\frac{m}{n} + K = \frac{m}{-\frac{1}{3}} + K = -3m + K = -15 + 1 = -14$$

$$-\frac{1}{4}\alpha^2 + 2\alpha + 6 > \frac{1}{4} \rightarrow -\frac{1}{4}\alpha^2 + 2\alpha + \frac{5}{4} < 0$$

$$\xrightarrow{\times(-4)} \alpha^2 - 8\alpha - 5 < 0$$

$$(\alpha-5)(\alpha+1) < 0$$

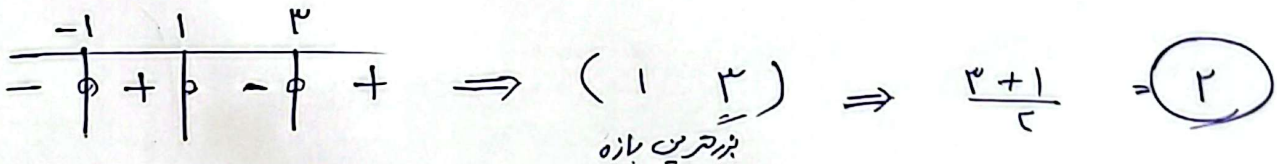


$$\text{Max}(b-a) = 5 - (-1) = 6$$

$$f(\alpha) = \alpha^2(\alpha-3) - (\alpha-3) \Rightarrow (\alpha-3)(\alpha-1)(\alpha+1)$$

$$(\alpha-3)(\alpha+1)(\alpha-1) < 0$$

$$f(2) = 8 - 12 + 3 - 2 = -3$$



$$(a-1)\alpha^2 + (a-1)\alpha + 1$$

$$a-1 < 0 \Rightarrow a < 1$$

$$\Delta < 0 \Rightarrow a^2 - 2a + 1 - 4a + 4 < 0$$

$$a^2 - 6a + 5$$

$$(a-1)(a-5)$$

