(۱۹)

تکلیف، ترم اول تابستان
شماره : ۱۳

Subject:
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(۱)
$\frac{-b}{2a} = 2 \rightarrow \frac{-1}{2a-2} = 2 \Rightarrow -1 = 4a - 4 \Rightarrow a = \frac{3}{4}$ (۲)

$\rightarrow -\frac{1}{4}x^2 + x + 3 = 0 \rightarrow x^2 - 4x - 12 = 0 \rightarrow (x-6)(x+2) = 0 \xrightarrow{x>0} x = 6$

(۲)
ط. جدول تعیین علامت $\rightarrow m \not> 0$ ($m<0$), $\Delta > 0 \rightarrow 25 - 4m^2 > 0 \Rightarrow 4m^2 < 25 \rightarrow$

$m < \frac{5}{2}$, $m > -\frac{5}{2} \longrightarrow m \in (0, \frac{5}{2})$ $\quad -\frac{5}{2} < m < 0$ (۱)

(۳)
$x^2 - Sx + P = 0 \longrightarrow S = \frac{3 - \sqrt{5} + 3 + \sqrt{5}}{3} = 2$ (۲)

$P = \frac{(3+\sqrt{5})(3-\sqrt{5})}{9} = \frac{9-5}{9} = \frac{4}{9} \longrightarrow x^2 - 2x + \frac{4}{9} = 0 \Rightarrow$

$9x^2 - 18x + 4 = 0$

(۴)
$S = 4 \Rightarrow \alpha + \beta = 4 \Rightarrow \beta = 4 - \alpha$

$\rightarrow 3\alpha^2 + (4-\alpha)^2 = 12 \rightarrow 4\alpha^2 - 8\alpha + 4 = 0 \rightarrow \alpha^2 - 2\alpha + 1 = 0$ (۲)

$\rightarrow (\alpha - 1)^2 = 0 \longrightarrow \alpha = 1 , \beta = 3 \rightarrow P = \frac{m+2}{4} = 3 \Rightarrow m = 10$

(۵)
$y = a(x-2)^2 + 9 \xrightarrow{(0,5)} 5 = 4a + 9 \Rightarrow 4a = -4 \rightarrow a = -1$

$\rightarrow y = -(x^2 + 4 - 4x) + 9 = -x^2 + 4x + 5 = 0 \rightarrow x = 5$ (۲)

$\begin{array}{c|c|c} -1 & & 5 \\ - \; 0 & + & 0 \; - \end{array} \longrightarrow (-1, 5)$ $\quad x = -1$

(۶)
$\frac{1}{a} + \frac{1}{\beta} = -\frac{1}{3} + \frac{3}{2} = \frac{-2+9}{6} = \frac{7}{6}$

$a\beta = \frac{9\beta}{a} \Rightarrow a^2 = 9 \Rightarrow a = \pm 3$ (۲)

$a + \beta = \frac{7}{a} \xrightarrow{a=3} \beta = \frac{7}{3} - 3$ غ ق ق $\longrightarrow a = -3 , \beta = \frac{2}{3}$

Arman

page: ( ) $S=-m \ , \ P=-2m$ Subject: Year: Month: Day:

(7)

$\beta^2+m\beta-2m=0 \Rightarrow m\beta=2m-\beta^2 \ , \ \alpha^2-m\beta=8 \Rightarrow$

$\underbrace{\alpha^2+\beta^2}_{S^2-2P}-2m-8=0 \Rightarrow S^2-2P=2m+8 \longrightarrow$

$m^2+4m=2m+8 \Rightarrow m^2+2m-8=0 \longrightarrow m=-4 \ , \ m=2$

$m=2 \longrightarrow \Delta=20 \longrightarrow ✓ \ , \ m=-4 \longrightarrow \Delta=-16 \longrightarrow X \longrightarrow \underline{S=-2}$

(8)

$\frac{-\Delta}{4a}\left(\frac{4ac-b^2}{4a}\right)=8 \longrightarrow \frac{2m^2+28m-16}{4m}=8 \Rightarrow 2m^2-4m-16=0$

$\longrightarrow m^2-2m-8=0 \longrightarrow m=4 \longrightarrow y=4x^2+4x+9 \longrightarrow \Delta<0 \ X$

$K>0 \rightarrow K=3$ ☆ $\Longleftarrow m=-2 \rightarrow y=-2x^2+4x+6 \Rightarrow x=-1 \ , \ x=3$

(9)

$y=a(x-2)^2+6 \xrightarrow{(0,4)} 4=4a+6 \rightarrow a=-\frac{1}{2}$

$y=-\frac{1}{2}(x^2+4-4x)+6=-\frac{x^2}{2}+2x+4=0$

$\frac{1}{\alpha}+\frac{1}{\beta}=\frac{\alpha+\beta}{\alpha\beta}=\frac{4}{-8}=-\frac{1}{2}$

(10)

$4-8a-8+3a^2+6a+3=0 \rightarrow 3a^2-2a-1=0$

$a=1 \ , \ a=-\frac{1}{3}$

$a=1 \longrightarrow x^2-(4+4)x+(3+6+3)=$

$x^2-8x+12=0 \longrightarrow (x-2)(x-6)=0 \rightarrow x=2 \ , \ x=6$

$a=-\frac{1}{3} \longrightarrow x^2-(-\frac{4}{3}+4)x+(+\frac{3}{9}-2+3)=0$

$x^2-\frac{8}{3}x+\frac{4}{3}=0 \longrightarrow x=\frac{\frac{8}{3}\pm\frac{4}{3}}{2}$

$\longrightarrow \boxed{x=6} \ , \ \boxed{x=\frac{2}{3}}$