

۱۹, ۷۵

نام و نام خانوادگی: سید فرزاد میرهادی پاسخنامه تشریحی تکلیف شماره ۱ کلاس هم سیر ۵

الف) $x^2 - 6x + 1 = 0 \xrightarrow{\pm 1} x^2 - 6x + 9 = 1 \rightarrow x - 3 = \pm 1 \rightarrow x = 4$
 $\rightarrow x = 2$

ب) $x^2 - 11x + 10 = 0 \xrightarrow{+9} x^2 - 11x + 49 = 9 \rightarrow x + 7 = \pm 9 \rightarrow x = -2$
 $\rightarrow x = -10$

الف) $x^2 - 5x + 6 = 0 \rightarrow (x - 3)(x - 2) = 0 \rightarrow x = 3$
 $\rightarrow x = 2$

ب) $x^2 - 5x + 14 = 0 \rightarrow (x - 7)(x + 2) = 0 \rightarrow x = 7$
 $\rightarrow x = -2$

الف) $x^2 - 3x + 2 = 0 \rightarrow x = \frac{-b \pm \sqrt{\Delta}}{2a} \rightarrow x = \frac{3 \pm \sqrt{9 - 4}}{2} \rightarrow x = 2$
 $\rightarrow x = 1$

ب) $4x^2 - 4x + 1 = 0 \rightarrow x = \frac{-b \pm \sqrt{\Delta}}{2a} \rightarrow x = \frac{1 \pm \sqrt{1 - 4}}{4} \rightarrow x = \frac{1 \pm i\sqrt{3}}{4}$

الف) $x^2 - 3x + 2 = 0 \rightarrow a + b + c = 0 \rightarrow a = 1$
 $\rightarrow a = \frac{c}{a} = 2$

ب) $4x^2 + 4x - 3 = 0 \rightarrow a + c = b \rightarrow a = -1$
 $\rightarrow a = \frac{-c}{a} = \frac{3}{4}$

الف) $5x^2 - 14x + 8 = 0 \xrightarrow{a \times c} x^2 - 14x + 16 = 0 \rightarrow (x - 2)(x - 8) = 0 \rightarrow x = 2$
 $\rightarrow x = 8$

ب) $10x^2 - 11x + 3 = 0 \xrightarrow{a \times c} x^2 - 11x + 30 = 0 \rightarrow (x - 5)(x - 6) = 0 \rightarrow x = 5$
 $\rightarrow x = 6$

مستقی

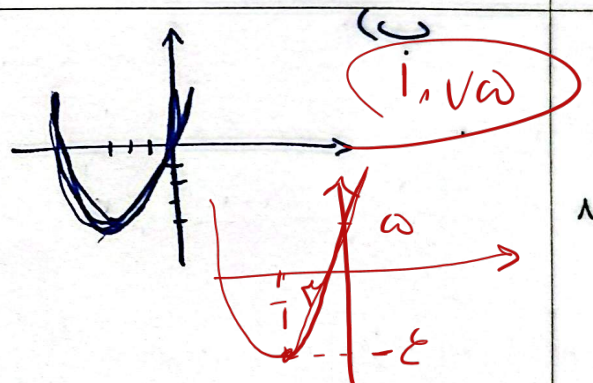
(الف) $3a^2 + 5a - 1 = 0$ (ب) $2a^2 - a + 2 = 0$ → منفی به بدو
 $\Delta = b^2 - 4ac = 25 - 4 \times 3 \times (-1) = 37$ (ب) $\Delta = b^2 - 4ac = 1 - 4 \times 2 \times 2 = -15$
 = 25 - 12 = 13

(ب) $2a^2 - a + 1 = 0$ (ج) $2a^2 - 5a + 2 = 0$
 $\Delta = b^2 - 4ac = 1 - 4 = -3$ (حقیقی) $\Delta = b^2 - 4ac = 25 - 16 = 9$
 = 9 - 16 = -7

$2a^2 - 3a + a = 0 \rightarrow \Delta = b^2 - 4ac = 9 - 4 \times 2 \times 1 = 1$
 الف $\rightarrow \Delta \rightarrow$ مثبت $1 - 8a > 0 \rightarrow a < \frac{1}{8}$
 ب $\rightarrow \Delta \rightarrow 0 \rightarrow 1 - 8a = 0 \rightarrow a = \frac{1}{8}$
 ج $\rightarrow \Delta \rightarrow$ منفی $1 - 8a < 0 \rightarrow a > \frac{1}{8}$
 د $\rightarrow \Delta \rightarrow$ غیر مثبت $1 - 8a > 0 \rightarrow a \leq \frac{1}{8}$

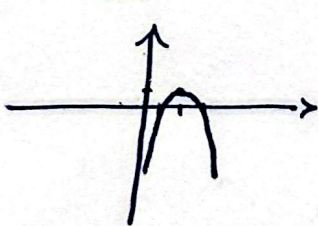
$y = x^2 + 6x + 9 \rightarrow \min$ (الف)

$\frac{-b}{2a} = \frac{-6}{2} = -3$ $x = 0$
 $y = 9$
 $(-3)^2 + 6(-3) + 9 = 9 - 18 + 9 = 0$



$y = -a^2 + 4a - 3 \rightarrow \max$ (الف)

$\frac{-b}{2a} = \frac{-4}{-2} = 2$
 $-4 + 8 - 3 = 1$



(ب) $-a^2 + 4a - 3 = 0$
 $\rightarrow a + b + c = 0$
 $\rightarrow a \leq 1$
 $\rightarrow a \leq \frac{c}{a} = 3$

$a^2 - 3a - 2 = 0$
 $a^2 - 5a + 10 = 0 \rightarrow S = 5, P = 10$
 $S^2 - 2P = 25 - 2(10) = 5$ (الف)
 $S^2 - 3SP = 25 - 3(5 \times 10) = -25$ (ب)