

سوال (1)

(الف) $x^2 - 4x + 9 = 1$

$$\sqrt{(x-3)^2} \rightarrow x-3 = 1 \rightarrow x = 4$$

$$x-3 = -1 \rightarrow x = 2$$

(ب) $x^2 + 1x + 14 = 9$

$$\sqrt{(x+4)^2} \rightarrow x+4 = 3 \rightarrow x = -1$$

$$x+4 = -3 \rightarrow x = -7$$

(الف) $(x-2)(x-3) \rightarrow x = 2, 3$

سوال (2)

(ب) $(x-7)(x+2) \rightarrow x = 7, -2$

(الف)
$$\frac{3 \pm \sqrt{9+20}}{2} \rightarrow x = \frac{3 + \sqrt{29}}{2}$$

$$x = \frac{3 - \sqrt{29}}{2}$$

سوال (3)

(ب)
$$\frac{4 \pm \sqrt{14-4}}{2} \rightarrow x = \frac{4 + \sqrt{10}}{2}$$

$$x = \frac{4 - \sqrt{10}}{2}$$

سوال (4)

(الف) $a+b+c=0 \quad x = \frac{c}{a}, 1 \Rightarrow x = 2, 1$

(ب) $a+c=b \quad x = -\frac{c}{a}, -1 \Rightarrow x = -1, \frac{3}{4}$

(سوال ۵)

الف) $x^2 - 12x + 35 \rightarrow (x-7)(x-5) \rightarrow x = \frac{5}{1} = 5$ و $\frac{7}{1} = 7$

ب) $x^2 - 10x + 21 \rightarrow (x-3)(x-7) \rightarrow x = \frac{3}{1} = 3$ و $\frac{7}{1} = 7$

$$\Delta = b^2 - 4ac$$

(سوال ۶)

الف) $\Delta = 25 - 12 = 13 \rightarrow$ ۲ ریشه حقیقی

ب) $\Delta = 1 - 14 = -13 \rightarrow$ ۰ ریشه

پ) $\Delta = 14 - 14 = 0 \rightarrow$ ۱ ریشه

ت) $\Delta = 1 - 1 = 0 \rightarrow$ ۰ ریشه

(سوال ۷)

الف) Δ مثبت $9 - 1a > 0$ $9 > 1a$ $1, 2, 5 > a$

ب) Δ صفر $9 - 1a = 0$ $9 = 1a$ $1, 2, 5 = a$

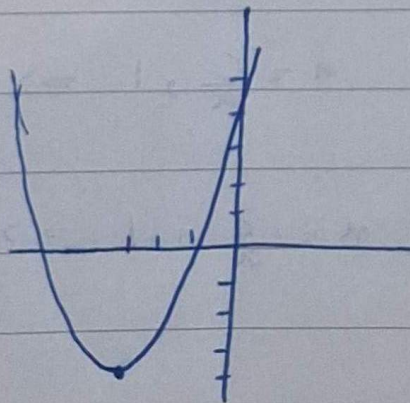
ج) Δ منفی $9 - 1a < 0$ $9 < 1a$ $1, 2, 5 < a$

د) Δ نامنفی $9 - 1a \geq 0$ $9 \geq 1a$ $1, 2, 5 \geq a$

(سوال ۸)

الف) $a > 0 \Rightarrow \min$
 $\left| \begin{array}{c} -\frac{b}{2a} \\ -\frac{\Delta}{4a} \end{array} \right| \Rightarrow \left| \begin{array}{c} -3 \\ -4 \end{array} \right|$

ب)

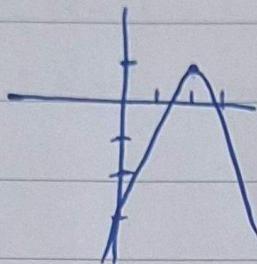


سوال (٩)

$$a < 0 \Rightarrow \max$$

(الف)

$$\left| \begin{array}{c} -b \\ 2a \end{array} \right| = \left| \begin{array}{c} 2 \\ 1 \end{array} \right|$$



ب) $a - b + c = 0 \rightarrow x = 1, 3$

$$S = \frac{-b}{a} \quad P = \frac{c}{a}$$

سوال (١٠)

الف) $9 - 2(-2) = 9 + 4 = 13$

ب) $27 - 3\left(\frac{3 - 4}{1 - 2}\right) = 27 + 18 = 45$