

سوال (1)

2

الف)  $x^2 - 4x + 9 = 1$

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

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

ب)  $x^2 + 1x + 14 = 9$

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

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

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

سوال (2)

2

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

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

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

سوال (3)

2

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

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

سوال (4)

2

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

ب)  $a+c=b \quad x = -\frac{c}{a}, -1 \Rightarrow x = -1, \frac{3}{2} \checkmark$

سوال (٢)

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 (٢)

الف)  $\Delta = 25 - 12 = 13 \rightarrow$  ٢ ریشه حقیقی ✓

ب)  $\Delta = 1 - 14 = -13 \rightarrow$  ٠ ریشه ✓

پ)  $\Delta = 14 - 14 = 0 \rightarrow$  ١ ریشه ✓

ت)  $\Delta = 1 - 1 = 0 \rightarrow$  ٠ ریشه ✓

سوال (٧)

الف)  $\Delta$  مثبت ✓  $9 - 1a > 0$   $9 > 1a$   $1, 2, 5 > a$

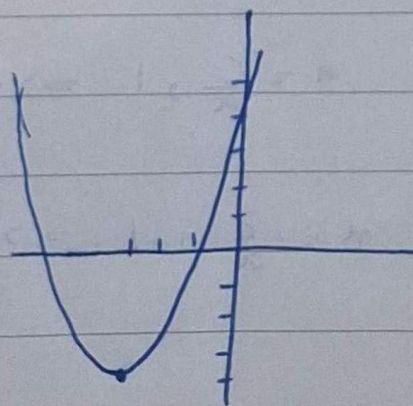
ب)  $\Delta$  صفر ✓  $9 - 1a = 0$   $9 = 1a$   $1, 2, 5 = a$

ج)  $\Delta$  منفی ✓  $9 - 1a < 0$   $9 < 1a$   $1, 2, 5 < a$

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

سوال (٨)

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)

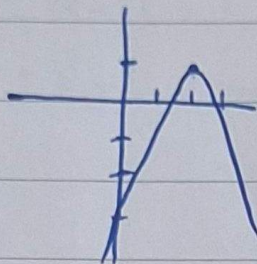
سوال (٩)

(٢)

$$a < 0 \Rightarrow \max$$

(الف)

$$\left| \begin{array}{c} -\frac{b}{2a} \\ -\frac{\Delta}{4a} \end{array} \right| \Rightarrow \left| \begin{array}{c} 2 \\ 1 \end{array} \right| \quad \checkmark$$



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

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

سوال (١٠)

(٢)

الف)  $9 - 2(-2) = 9 + 4 = 13 \quad \checkmark$

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