

الف) $x^2 - 4x + 4 = 1 \rightarrow (x-2)^2 = 1 \rightarrow x-2 = \pm 1 \rightarrow \left. \begin{array}{l} x=3 \\ x=1 \end{array} \right\}$

ب) $x^2 + 14x + 49 = 9 \rightarrow (x+7)^2 = 9 \rightarrow x+7 = \pm 3 \rightarrow \left. \begin{array}{l} x=-4 \\ x=-10 \end{array} \right\}$
 $2(7x)$

الف) $(x-2)(x-3) \rightarrow \left. \begin{array}{l} x=2 \\ x=3 \end{array} \right\}$

ب) $(x+2)(x-7) \rightarrow \left. \begin{array}{l} x=-2 \\ x=7 \end{array} \right\}$

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

ب) $\frac{-(-4) \pm \sqrt{16-4}}{4} = \frac{4 \pm \sqrt{12}}{4} = \frac{4 \pm 2\sqrt{3}}{4} = \frac{2 \pm \sqrt{3}}{2}$
 $\frac{4 \pm 2\sqrt{3}}{4} = \frac{2 \pm \sqrt{3}}{2}$

الف) $x^2 - 12x + 35 = 0 \rightarrow (x-5)(x-7) \rightarrow \left. \begin{array}{l} x=5 \\ x=7 \end{array} \right\}$

ب) $x^2 - 10x + 21 = 0 \rightarrow (x-3)(x-7) \rightarrow \left. \begin{array}{l} x=3 \\ x=7 \end{array} \right\}$

الف) $(x-1)(x-2) \rightarrow \left. \begin{array}{l} x=1 \\ x=2 \end{array} \right\}$

ب) $x^2 + x - 12 = (x-3)(x+4) \rightarrow \left. \begin{array}{l} x=3 \\ x=-4 \end{array} \right\}$

۴- جواب

سوال ۵

جایگاه برشته شد

۵- جواب

سوال ۴

$$\text{الف) } \frac{-5 \pm \sqrt{25-12}}{-9} \rightarrow \frac{5 \pm \sqrt{13}}{9} \quad (\text{ریشه ها})$$

$$\text{ب) } \frac{1 \pm \sqrt{1-14}}{4} \rightarrow (\text{ریشه ندارد})$$

$$\text{ج) } \frac{4 \pm \sqrt{16-16}}{4} \rightarrow (\text{ریشه ها صاف}) \rightarrow \left(\frac{4}{4}, 1\right)$$

$$\text{د) } \frac{1 \pm \sqrt{1-1}}{4} \Rightarrow (\text{ریشه ندارد})$$

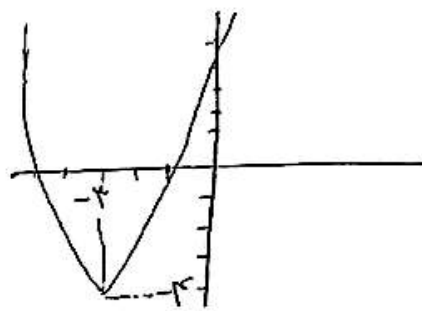
$$\frac{3 \pm \sqrt{9-4(2a)}}{4}$$

الف) $a < \frac{9}{4}$
 ب) $a = \frac{9}{4}$
 ج) $a > \frac{9}{4}$

$$\begin{aligned} 9-4(2a) &= 0 \\ 9-4a &= 0 \\ 9 &= 4a \\ \frac{9}{4} &= a \end{aligned}$$

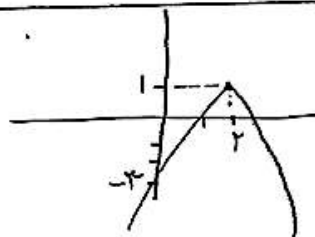
$$\text{Min} \quad \frac{-9}{2} = -4.5$$

$$(-3)^2 + 9(-3) + 0 = 9 - 27 + 0 = -18$$



$$\text{Max} \quad \frac{-4}{-1} = 4$$

$$-4 + 1 - 3 = -6$$



$$\text{ب) } x^2 + 4x + 3 = (x+1)(x+3) \rightarrow \left. \begin{aligned} x &= -(-1) = 1 \\ x &= -(-3) = 3 \end{aligned} \right\}$$

$$S_{\text{جمع}} = \frac{-(-3)}{1}, 3 \text{ فر } \frac{-2}{1}, -2$$

$$\text{الف) } (3)^2 - 2(-2) = 9 + 4 = 13$$

$$\text{ب) } (3)^2 - 3(3)(\sqrt{2}) = 9 - 9\sqrt{2} = 9(1 - \sqrt{2})$$