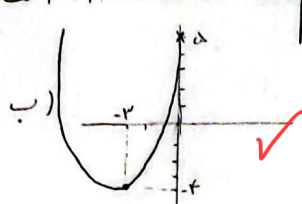
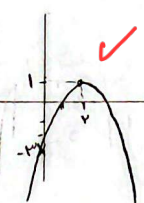


الف) $y = x^2 + 4x + 5$
 $-1^2 + 4(-1) + 5 = 1 - 4 + 5 = 2$
 $19, 18$
 $\frac{-b}{2a} = -2$ ✓
 $\frac{-b}{2a} = -2$ ✓
 ب) 

الف) $y = -x^2 + 4x - 3$
 $\frac{-b}{2a} = \frac{4}{-2} = -2$ ✓
 $\Delta = b^2 - 4ac = 16 - 12 = 4$
 $x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-4 \pm 2}{-2} = 1 \text{ or } 3$
 ب) $y = 0 \Rightarrow x^2 - 4x + 3 = 0 \Rightarrow (x-1)(x-3) = 0$
 $x = 1 \text{ or } x = 3$ ✓


الف) $\Delta = b^2 - 4ac$ if $\Delta > 0 \Rightarrow 9 - 4a > 0 \Rightarrow a < \frac{9}{4}$ ✓
 ب) if $\Delta = 0 \Rightarrow 9 - 4a = 0 \Rightarrow a = \frac{9}{4} = 2.25$ ✓
 ج) if $\Delta < 0 \Rightarrow 9 - 4a < 0 \Rightarrow a > \frac{9}{4}$ ✓
 د) if $\Delta \geq 0 \Rightarrow 9 - 4a \geq 0 \Rightarrow a \leq \frac{9}{4}$ ✓

الف) $x^2 - 2x - 1 = 0 \Rightarrow x^2 - 2x + 1 = 2 \Rightarrow (x-1)^2 = 2 \Rightarrow x-1 = \pm\sqrt{2} \Rightarrow x = 1 \pm \sqrt{2}$ ✓
 ب) $x^2 - x - 1 = 0 \Rightarrow x^2 - x + \frac{1}{4} = 1 + \frac{1}{4} \Rightarrow (x - \frac{1}{2})^2 = \frac{5}{4} \Rightarrow x - \frac{1}{2} = \pm\sqrt{\frac{5}{4}} \Rightarrow x = \frac{1 \pm \sqrt{5}}{2}$ ✓

الف) $x^2 - 2x - 1 = 0$
 $\Delta = b^2 - 4ac = 4 - (-4) = 8$
 $x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{2 \pm \sqrt{8}}{2} = 1 \pm \sqrt{2}$ ✓
 ب) $x^2 + x - 4 = 0$
 $\Delta = b^2 - 4ac = 1 - (-16) = 17$
 $x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-1 \pm \sqrt{17}}{2}$ ✓

$$\begin{aligned} \text{ا) } x^V - 11x + 11 &= 0 \\ (x-1)(x-11) &= 0 \\ x &= 1, 11 \end{aligned}$$

2

$$\begin{aligned} \text{ب) } x^V + 11x - 11 &= 0 \\ (x+11)(x-1) &= 0 \\ x &= -11, 1 \end{aligned}$$

$$(x-1)(\quad)$$

$$\text{ا) } \Delta x^V - 11x + V = 0$$

$$\Delta x^V = 11\Delta \quad x^V - 11x + 11\Delta = 0 \quad (x-V)(x-\Delta) = 0 \quad \alpha = \frac{V}{\Delta} \text{ or } \alpha = \frac{\Delta}{\Delta} = 1$$

2

$$\text{ب) } 11x^V - 10x + V = 0$$

$$11x^V = 11 \quad x^V - 10x + 11 = 0 \quad (x-1)(x-11) = 0 \quad \alpha = \frac{11}{11} = 1 \text{ or } \alpha = \frac{V}{11}$$

$$Vx^V - \Delta x + 11 = 0 \quad \begin{matrix} V - \Delta + 11 = 0 \\ a+b+c=0 \end{matrix} \quad \begin{matrix} x > 1 \\ \rightarrow \frac{V}{V} \end{matrix} \quad x = 1 \text{ or } \frac{V}{V}$$

2

$$Vx^V + \Delta x + 11 = 0 \quad \begin{matrix} V + \Delta = \Delta \\ a+b+c=0 \end{matrix} \quad \begin{matrix} x > -1 \\ \rightarrow -\frac{V}{V} \end{matrix} \quad x = -1 \text{ or } -\frac{V}{V}$$

$$Vx^V - \Delta x + 1 = 0 \quad \Delta = (-\Delta)^V - (11 \times 1) = 11\Delta - 11 = 11 \quad x = \frac{-\Delta \pm \sqrt{11}}{V}$$

$$11x^V + Vx + 9 = 0 \quad \Delta = V^V - 11\epsilon = -9\Delta \quad \Delta < 0 \quad 9\Delta < 0 = 9 \quad \Delta < 0 \Rightarrow 9$$

$$x^V - 11x - 11 = 0 \quad S = \frac{-b}{a} = \frac{11}{1} = 11 \quad P = \frac{c}{a} = \frac{-11}{1} = -11$$

$$\text{ا) } S^V - 11P = \frac{11}{1} - \frac{-11}{1} = 11 + 11 = 22$$

$$\text{ب) } S^V - 11Sp = \frac{11}{1} - \frac{11 \times 11}{1} = 11 - 121 = -110$$

$$\text{ا) } \left(\frac{V}{\Delta} \right) + \left(\frac{9}{1} \right) = \frac{V^V}{11 \times 11} + \frac{9^V}{11 \times 11} = (11 \times V) + (11 \times 9) = 11 + 99 = 110$$

110

$$\text{ب) } \left(\frac{9}{11} \right) - \left(\frac{11}{1} \right) = \frac{9^V}{11 \times 11} - \frac{11^V}{11 \times 11} = (11 \times 9 \times 11) - (11 \times 11) = 11 \times 9 - 11 = 99 - 11 = 88$$