

1, 1, 2

$$x^9 + 1 \mid x + 1 \Rightarrow x^9 + 1 = (x + 1)Q(x) + R(x)$$

$$x^r + 1x + 19 = -v + 19$$

$$(x+5)^r - 9 \rightarrow x+5 = r \rightarrow x = -1$$

9

$$\hookrightarrow x = -v$$

9

5

$$\frac{r \pm r\sqrt{k}}{r}$$

9

ب) $x^2 + x - 12 = (x+4)(x-3) = 0$ $\rightarrow x = \frac{12}{x}$
 اوسط روشی $\rightarrow x = \frac{12}{x}$

9

$$b) = x^2 - 10x + 21 = (x-3)(x-7) = 0 \rightarrow \boxed{x \leq \frac{w}{\mu} \leq 1}$$

$$\text{الف) } x = \frac{-a \pm \sqrt{a^2 - 4(-1)(-3)}}{-2} = \frac{-a \pm \sqrt{13}}{-2} \rightarrow \underline{-1, 2} \quad \text{D}$$

$$\text{ب) } x = \frac{1 \pm \sqrt{1 - 4(1)(-1)}}{2} = \frac{1 \pm \sqrt{5}}{2} \rightarrow \underline{-1, 2} \quad \text{صنعتی / غیر افعال}$$

$$\text{ج) } x = \frac{4 \pm \sqrt{16 - 4(1)(1)}}{2} = \frac{4 \pm \sqrt{12}}{2} = \frac{4 \pm 2\sqrt{3}}{2} = 2 \pm \sqrt{3} \rightarrow \underline{-1, 1} \quad (\text{مفاجات})$$

$$\text{د) } x = \frac{1 \pm \sqrt{1 - 4(1)(1)}}{2} = \frac{1 \pm \sqrt{-3}}{2} \rightarrow \underline{-1, 2}$$

$$\Delta = 9 - 4(1)(a) = 9 - 4a \rightarrow \Delta > 0 \rightarrow 9 - 4a > 0 \rightarrow 9 > 4a \rightarrow \boxed{\frac{9}{4} > a} \quad \text{الف) } \checkmark$$

$$\Delta = 0 \rightarrow 9 - 4a = 0 \rightarrow 9 = 4a \rightarrow \boxed{a = \frac{9}{4}} \quad \text{ب) } \checkmark$$

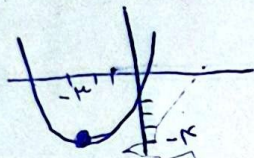
$$\Delta < 0 \rightarrow 9 - 4a < 0 \rightarrow 9 < 4a \rightarrow \boxed{\frac{9}{4} < a} \quad \text{ج) } \checkmark$$

$$\text{د) } \Delta < 0 \rightarrow \text{هیچ جوابی نیست} \rightarrow \boxed{a < \frac{9}{4}} \quad \text{د) } \checkmark$$

$$\text{الف) } x = \frac{-b}{2a} = \frac{-9}{2} = -4.5 \quad \text{Min} = \left[\frac{-3}{-2} \right] / \text{Min}$$

$$y = \frac{-\Delta}{2a} = \frac{-(b^2 - 4ac)}{4} = \frac{-(81 - 4(1)(-3))}{4} = \frac{-117}{4} = -29.25$$

ب)



ج

$$\text{الف) } x = \frac{-b}{2a} = \frac{-1}{-2} = 0.5 \quad \text{Max} = \left[\frac{1}{2} \right]$$

$$y = \frac{-\Delta}{4a} = \frac{-(1 - 4(1)(1))}{4} = \frac{3}{4} = 0.75$$

$$\text{ب) } y = -x^2 + 2x - 1 \rightarrow x^2 - 2x + 1 = 0 \rightarrow (x-1)(x-1) = 0 \rightarrow \boxed{x=1} \quad \text{ج}$$

$$\rightarrow [1], [1]$$

$$\text{الف) } x^2 - 2x + 1 = 0 \rightarrow (x-1)^2 = 0 \rightarrow x=1$$

$$S = \frac{-b}{a} = \frac{-(-2)}{1} = 2$$

$$P = \frac{c}{a} = \frac{1}{1} = 1$$

$$\text{الف) } S^2 - 2P = (2)^2 - 2(1) = 4 - 2 = 2$$

$$\text{ب) } S^2 - 2P = (2)^2 - 2(1) = 4 - 2 = 2$$