

الف) منبسط و دراست و حاصل کنی

$$f = 2x^2 + 2x + 5$$

ب) رسم نمودار

ج)  $\frac{b}{2a} = \frac{2}{4} = \frac{1}{2}$   
 $\frac{c}{a} = \frac{5}{2}$   
 $9 - 18 + 5 = -4$

الف)  $\frac{b}{2a} = \frac{3}{4} = 0.75$   
 $\frac{c}{a} = \frac{1}{4} = 0.25$   
 $0.4 + 4(2) = 8.4$

ب) دقتا و! ادا ۳  
 $0 = -x^2 + 6x + 3$

ج)  $0 < \frac{b}{2a}$   
 $0 = 0$   
 $0 < 0$   
 $0 > 0$

الف)  $\Delta > 0$   
 ب)  $\Delta = 0$   
 ج)  $\Delta < 0$   
 د)  $\Delta > 0$

ب)  $\Delta = b^2 - 4ac = 9 - 18 = -9$

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

ب)  $x - \frac{1}{2} = \pm \frac{\sqrt{5}}{2}$   
 $x = \frac{1}{2} \pm \frac{\sqrt{5}}{2}$

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)  $x^2 + 2x - 6 = 0$   
 $\Delta = 4 + 24 = 28$   
 $x = \frac{-2 \pm \sqrt{28}}{2} = -1 \pm \sqrt{7}$

$$x^2 - 11x + 28 = 0 \rightarrow (x - 4)(x - 7) = 0 \begin{cases} x=7 \\ x=4 \end{cases} \text{ (الف)}$$

$$x^2 + 3x - 78 = 0 \rightarrow (x + 11)(x - 7) = 0 \begin{cases} x = 7 \\ x = -11 \end{cases} \text{ (ب)}$$

$$17x^2 + 7 = 0 \rightarrow 17x^2 = -7 \rightarrow x = \pm \sqrt{-\frac{7}{17}} \text{ (الف)}$$

$$3x^2 - 10x + 7 = 0 \rightarrow (3x - 7)(x - 1) = 0 \begin{cases} x = \frac{7}{3} \\ x = 1 \end{cases} \text{ (ب)}$$

$$7x^2 - 5x + 7 = 0 \quad \Delta = \frac{25}{4} < 0 \quad \text{مجموع ضرب صفیری است} \begin{cases} \frac{1}{2} \\ \frac{1}{2} \end{cases}$$

$$2x^2 + 5x + 4 = 0 \rightarrow (2x + 4)(x + 1) = 0 \rightarrow x = -2, -1 \text{ (ب)}$$

$$2x^2 - 5x + 1 = 0 \rightarrow \Delta = 25 - 8 = 17 \quad \begin{pmatrix} 5 + \sqrt{17} \\ 4 \\ 5 - \sqrt{17} \\ 4 \end{pmatrix}$$

$$x^2 + 7x + 9 = 0 \rightarrow \Delta = 49 - 36 = 13 < 0 \quad \text{ریشه‌های نواقص. کما} \rightarrow 9 - 16 = -7 \quad \text{ع} \rightarrow 9 - 16 = -7$$

$$S^2 - 2P \text{ (الف)}$$

$$14 - 2(4) \rightarrow 14 - 8 = 6$$

$$S^2 - 3SP \text{ (ب)}$$

$$14 - 3(4)(4) = 14 - 48 = -34$$

$$S = -\frac{b}{a} = 3$$

$$P = \frac{c}{a} = -2$$

$$1 - 3 - 2 = -4$$

$$1 \times -3 \times -2 = 6$$

$$\text{الف) } \begin{pmatrix} 7 \\ 0 \end{pmatrix} + \begin{pmatrix} 2 \\ 9 \end{pmatrix} \rightarrow 21 + 18 = 39$$

$$\text{ب) } \begin{pmatrix} 7 \\ 9 \end{pmatrix} - \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

$$7 - 1 = 6 \quad 9 - 1 = 8$$

$$\frac{9}{4} = \frac{1 \times 9 \times 9}{4 \times 9 \times 4} = \begin{pmatrix} 9 \\ 4 \end{pmatrix}$$

$$\sqrt{18} = \sqrt{9 \times 2} = 3\sqrt{2} \quad \begin{pmatrix} 3 \\ 2 \end{pmatrix}$$

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