

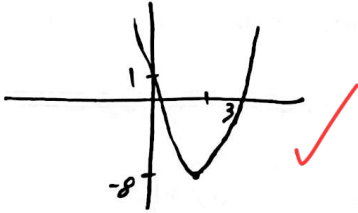
الف) Min $\rightarrow x = \frac{-b}{2a} = \frac{-4}{4} = -1$ $y = 2(1)^2 - 4(1) + 1 = -1$ ext $\left| \begin{matrix} 1 \\ -1 \end{matrix} \right.$ ✓

ب) Max $\rightarrow x = \frac{-b}{2a} = \left(\frac{3}{4} \right)$ $y = \frac{-\Delta}{4a} = -\frac{31}{8}$ ext $\left| \begin{matrix} 3/4 \\ -31/8 \end{matrix} \right.$ ✓

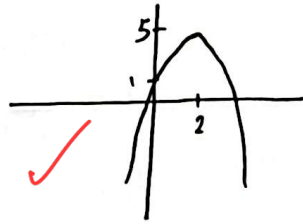
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الف) $x^2 - 6x + 1$ ext $\left| \begin{matrix} 3 \\ -8 \end{matrix} \right.$



ب) $-x^2 + 4x + 1$ ext $\left| \begin{matrix} 2 \\ 5 \end{matrix} \right.$



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$\begin{cases} a+B = -2 \\ a+B = 1 \end{cases} \Rightarrow \begin{cases} a = 2 \\ B = -1 \end{cases}$

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$x = -1 \rightarrow -4 + k + 9 - 2 = 0$

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$\begin{cases} k+3 = 0 \\ k = -3 \end{cases}$ ✓

$B + A - 2\sqrt{A}\sqrt{B} = 1$

$\Rightarrow -3\sqrt{m} + 3m = 1$

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$\Rightarrow m = 1 \Rightarrow 2x^2 - x - 1 = 0$

$\Rightarrow \frac{c}{a} = -\frac{1}{2}$ ✓

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محل از مبدأ تابع = ارتفاع مثلث ، اختلاف ریشها = $\frac{\sqrt{\Delta}}{|a|}$ با علامه مثلث

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با علامه مثلث $= \frac{\sqrt{(m+1)^2 - 4m}}{1} = \frac{\sqrt{m^2 + 2m + 1 - 4m}}{1} = \frac{\sqrt{m^2 - 2m + 1}}{1} = \frac{|m-1|}{1}$

$S_\Delta = \frac{1}{1} \times \frac{|m-1|}{1} \times |m| = \frac{m}{1} \rightarrow |m(m-1)| = 3 \rightarrow m(m-1) = 3 \rightarrow m^2 - m - 3 = 0 \rightarrow \begin{cases} m = -1 \\ m = 3 \end{cases}$
 $\hookrightarrow m(m-1) = -3 \rightarrow m^2 - m + 3 = 0 \rightarrow \Delta < 0$

$y = x^2 + x + 1 \rightarrow x_s = \frac{-b}{2a} = \frac{-1}{2}$

$y = x^2 - 3x + 1 \rightarrow x_s = \frac{-b}{2a} = \frac{3}{2}$

$$\frac{-\Delta}{4a} = \frac{7}{8} \Rightarrow \frac{4a^2 - 9}{4a} = \frac{7}{8} \Rightarrow 32a^2 - 28a - 72 = 0 \Rightarrow 8a^2 - 7a - 18 = 0$$

$$\Rightarrow a^2 - 7a - 144 = 0 \Rightarrow (a-16)(a+9) = 0$$

$$\begin{cases} a=2 \\ a = \frac{-9}{8} \end{cases} \text{ يک مقدار } a \text{ صحیح}$$

(Y)

$$\frac{\sqrt{\Delta}}{|a|} = 2 \Rightarrow \sqrt{a^2 - 2a + 1} = 2$$

$$a-1=2 \Rightarrow a=3$$

$$\sqrt{100-4b} = 2$$

$$\begin{aligned} 4b &= 96 \\ \Rightarrow b &= 24 \end{aligned}$$

$$\Rightarrow x^2 - 10x + 24 = 0 \Rightarrow (x-4)(x-6)$$

$$\Rightarrow x^2 - 4x + 3 = 0 \Rightarrow (x-1)(x-3)$$

$$\Rightarrow (6 \times 4) - (3 \times 1) = 21$$

(Y)

$$\frac{-b}{2a} = \frac{1}{2}$$

$$\frac{-b}{2a} = \frac{1}{4}$$

$$b - \frac{b}{2} - 1 = \frac{a^2 + 8a}{4a} \Rightarrow a^2 + 12a = 0 \Rightarrow a(a+12) = 0 \Rightarrow a = \begin{cases} 0 \\ -12 \end{cases}$$

$$\frac{-\Delta}{4a} = \frac{a^2 + 8a}{4a}$$

$$\frac{-\Delta}{4a} = \frac{b^2 + 8b}{8b}$$

$$12x^2 - 12x + 2 = 0 \Rightarrow x = \frac{1}{4}$$

$$4b^2 + 40b + 6 = 4b(b+10) = 0 \Rightarrow b = -10$$

$$-\frac{a}{14} + \frac{a}{6} + r = \frac{-b}{\lambda} - 1 \rightarrow \frac{1r}{14} = \frac{-b}{\lambda} \rightarrow b = -4$$

$$b - a = -4 - (-14) = 10$$

$$-10 - (-12) = 2$$

(1, 0)

$$\alpha + \beta = \frac{-4}{25a}$$

$$\alpha\beta = \frac{b}{25a}$$

$$25a^2 + 25ab = -4$$

$$25a^2b = b \Rightarrow 25a^2 = 1 \Rightarrow a = \pm\left(\frac{1}{5}\right)$$

$$a = \frac{1}{5}$$

$$\Rightarrow 25ab = -5 \quad b = -1 \rightarrow b < a \text{ صحیح}$$

$$a = \frac{-1}{5}$$

$$\Rightarrow 25ab = -5 \Rightarrow b = 1 \rightarrow b > a \checkmark \Rightarrow \begin{cases} \alpha = \frac{-1}{5} \\ \beta = 1 \end{cases}$$

(1, 0)

→ جواب اول

$$a+b = -a^2 - b^2 + 12 \Rightarrow b(b+1) + a(a+1) - 12 = 0$$

$$(a^2 + a - 6) + (b^2 + b - 6) = 0$$

$$\Rightarrow (a+3)(a-2) + (b+3)(b-2) = 0$$

$$\begin{cases} a=2 \\ b=2 \end{cases} \Rightarrow a+b=4 \rightarrow \begin{cases} a^2 + b^2 - 12 = \frac{-b}{a} \rightarrow S^2 - 12 - 12 = S \quad \text{I} \\ a+b-1 = ab \rightarrow S-1=P \quad \text{II} \end{cases}$$

$$\rightarrow S^2 - 12(S-1) - 12 = S \rightarrow S^2 - 13S - 12 = 0 \rightarrow (S-15)(S+1) = 0 \rightarrow \begin{cases} S = -1 \times \\ S = 15 \checkmark \end{cases}$$

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