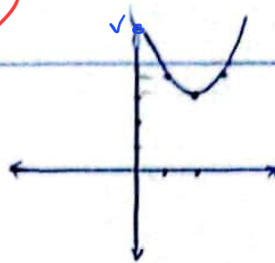


ب) Δ

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نشان بده

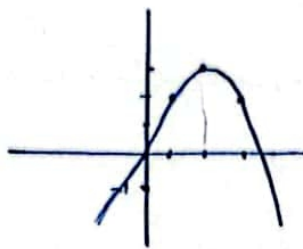
الف) $y = x^2 - 2x + 7$ $\left| \begin{array}{l} x = -\frac{b}{2a} = \frac{2}{2} = 1 \\ y = 6 \end{array} \right.$



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ب) $y = -x^2 + 2x - 1$

$\left| \begin{array}{l} x = -\frac{b}{2a} = 1 \\ y = 1 \end{array} \right.$



x	1	2	3
y	2	3	2

$2x^2 + (m+1)x + \frac{1}{r}m + 2 = 0 \quad \Delta > 0$

الف) ریشه ها

$\Delta > 0 \Rightarrow (m+1)^2 - 4 \cdot 2 \cdot (\frac{1}{r}m + 2) > 0 \Rightarrow m^2 - 2m - 1 > 0 \Rightarrow (m-5)(m+3) > 0 \Rightarrow \begin{cases} m > 5 \\ m < -3 \end{cases}$

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$\Delta = 0 \Rightarrow m^2 - 2m - 1 = 0 \Rightarrow (m-5)(m+3) = 0 \Rightarrow \begin{cases} m = 5 \\ m = -3 \end{cases}$ ب) یک ریشه مضاعف

$\Delta < 0 \Rightarrow m^2 - 2m - 1 < 0 \Rightarrow (m-5)(m+3) < 0 \Rightarrow -3 < m < 5$ ج) ریشه ها متمایز و مثبت

$\Delta \geq 0 \Rightarrow m^2 - 2m - 1 \geq 0 \Rightarrow (m-5)(m+3) \geq 0 \Rightarrow \begin{cases} m \leq -3 \\ m \geq 5 \end{cases}$ د) معادله دارای ریشه

$y = (m-2)x^2 - 2(m+1)x + 1$

الف) معادله دارای ریشه ها

$\Delta > 0 \Rightarrow b^2 - 4ac = (-2(m+1))^2 - 4(m-2)(1) = 4m^2 + 4m + 4 - 4m + 8 = 4m^2 + 8$

$4m^2 + 8 > 0 \Rightarrow m^2 + 2 > 0 \Rightarrow (m) (m) = 0$

ریشه ها $\frac{c}{a} > 0 \Rightarrow \frac{1}{m-2} > 0 \Rightarrow (2, +\infty)$

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ریشه ها $\frac{-b}{a} < 0 \Rightarrow \frac{2m+2}{m-2} < 0 \Rightarrow \frac{2(m+1)}{m-2} < 0 \Rightarrow \begin{array}{c|cc} x & -1 & 2 \\ y & + & - & + \end{array}$

$\Rightarrow (-1, 2)$ ریشه ها متمایز و مثبت $m \in \emptyset$

$$mx^2 - (m+2)x - 2 = 0 \quad ? \quad \Delta = \frac{b^2}{a} = \frac{m+2}{m}$$

$$\Delta = \frac{b^2}{a} = \frac{m+2}{m} \quad \Delta = \Delta p + V \Rightarrow \frac{m+2}{m} = \frac{-1}{m} + V$$

$$\frac{m+2}{m} + \frac{1}{m} = V \Rightarrow \frac{m+3}{m} = V \Rightarrow m+3 = Vm \Rightarrow m = 14 \Rightarrow m = 14$$

$$\rightarrow mx^2 - 4x - 2 = 0 \quad \Delta = \frac{b^2}{a} = \frac{16}{14} = \frac{8}{7} \quad \Delta = \frac{b^2}{a} = \frac{16}{14}$$

$$\alpha\beta = 2 \rightarrow \beta = \frac{2}{\alpha} \quad \frac{\alpha + \beta}{a} = 14$$

$$ax^2 + bx + c = 2x + 1 \Rightarrow ax^2 + (b-2)x + (c-1) = 0$$

$$x_1 + x_2 = 2+2=4 \Rightarrow S = \frac{-(b-2)}{a} = 4 \Rightarrow 2-b=4a \Rightarrow 4a+b=2$$

$$x_1 \times x_2 = 2 \times 2 = 4 \Rightarrow p = \frac{c-1}{a} = 4 \Rightarrow c-1=4a \Rightarrow c=4a+1$$

$$4a = -4 \Rightarrow a = -1 \rightarrow c = 4a+1 \Rightarrow c = -3$$

$$4a = -4 \Rightarrow a = -1 \rightarrow 2(-1) + b = 2 \Rightarrow b = 4$$

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

$$y = x \quad x^2 + (m+1)x + m+4 = x$$

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

$$x^2 + (m+1-1)x + m+4 = 0 \Rightarrow x^2 + mx + m+4 = 0 \quad \Delta = b^2 - 4ac$$

$$\Delta = 0 \Rightarrow m^2 - 4(m+4) = 0$$

$$(m)^2 - 4(1)(m+4) = 0 \Rightarrow m^2 - 4m - 16 = 0$$

$$m = \frac{4 \pm \sqrt{16+64}}{2} = m = 2 \pm 2\sqrt{5}$$

$$\Delta = 0 \rightarrow m = +2 - 2\sqrt{5}$$