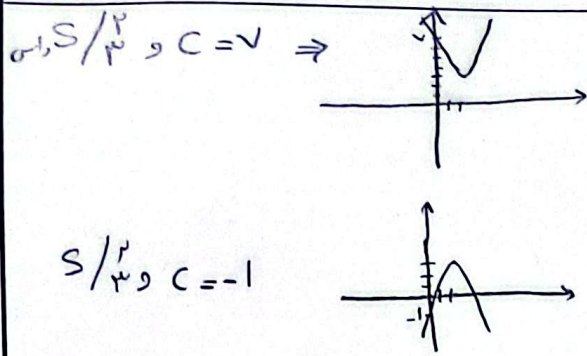




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الف) $\Delta > 0 \rightarrow b^2 - 4ac > 0 \rightarrow (m+1)^2 - 4(1)(\frac{1}{3}m+2) > 0 \rightarrow m^2 + 2m + 1 - \frac{4}{3}m - 8 > 0 \rightarrow m^2 - \frac{2}{3}m - 7 > 0$
 $\rightarrow m \rightarrow \frac{0}{-3} \rightarrow \frac{-\frac{2}{3} \pm \sqrt{\frac{4}{9} + 28}}{2} \rightarrow (-\infty, -3) \cup (5, +\infty)$

ب) $\Delta = 0 \rightarrow b^2 - 4ac = 0 \rightarrow m^2 - 2m - 10 = 0 \rightarrow m \rightarrow \frac{2 \pm \sqrt{4 + 40}}{2} \rightarrow \{-3, 5\}$

ج) $\Delta < 0 \rightarrow b^2 - 4ac < 0 \rightarrow m^2 - 2m - 10 < 0 \rightarrow m \rightarrow \frac{2 \pm \sqrt{4 - 40}}{2} \rightarrow (-3, 5)$

د) $\Delta > 0 \rightarrow m^2 - 2m - 10 > 0 \rightarrow m \rightarrow \frac{2 \pm \sqrt{4 - 40}}{2} \rightarrow (-\infty, -3] \cup [5, +\infty)$

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الف) $\frac{c}{a} = \frac{1}{m-2} > 0 \rightarrow m > 2$ $\frac{-b}{a} < 0 \rightarrow \frac{m+2}{m-2} < 0 \rightarrow \frac{-1}{+1-1+} \rightarrow (-1, 2)$

$\Delta > 0 \rightarrow (m-2)^2 - 4(1)(m-2) > 0 \rightarrow m^2 - 8m + 12 > 0$ $\Delta = 0 \rightarrow \text{هوازی} = [R] \cap (3)$
 $(1) \cap (2) \cap (3) = \emptyset$

ب) $\frac{c}{a} < 0 \rightarrow \frac{1}{m-2} < 0 \rightarrow m < 2$ $\frac{-b}{a} < 0 \rightarrow \frac{m+2}{m-2} < 0 \rightarrow \frac{-1}{+1-1+} \rightarrow (-1, 2)$

$\Delta > 0 \rightarrow m^2 - 8m + 12 > 0 \rightarrow \frac{-2 \pm \sqrt{4 - 40}}{2} \rightarrow (1) \cap (2) \cap (3) = (-1, 2)$

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الف) $\Delta > 0 \rightarrow m^2 - 8m + 12 > 0$ $\Delta < 0 \rightarrow \text{هوازی} = (1)$ $a \neq 0 \rightarrow m-2 \neq 0 \rightarrow m \neq 2$

ب) $\frac{c}{a} < 0 \rightarrow \frac{1}{m-2} < 0 \rightarrow m < 2$ $\frac{-b}{a} < 0 \rightarrow \frac{m+2}{m-2} < 0 \rightarrow \frac{-1}{+1-1+} \rightarrow (-1, 2)$
 $(1) \cap (2) \cap (3) = (-\infty, 2)$

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$\frac{-b}{2a} = -2 \rightarrow +8a = +b \rightarrow f(m-2) = -2m - 2 \rightarrow 8m - 1 = -2m - 2 \rightarrow 4m = 4 \rightarrow m = 1$

$\Delta > 0 \rightarrow b^2 - 4ac > 0 \rightarrow f \sin^2 a - f(\frac{1}{2} \times \frac{1}{2}) = 4 \sin^2 a - 4 > 0 \rightarrow 4 \sin^2 a - 4 = 4(\sin^2 a - 1) \rightarrow -4(\cos^2 a)$
 $-4 \cos^2 a > 0 \rightarrow \cos a = 0 \rightarrow \sin^2 a + \cos^2 a = 1 \Rightarrow \sin^2 a = 1 \Rightarrow \sin a = \pm 1 \Rightarrow \sum = \frac{f \sin a \pm \sqrt{4}}{\frac{1}{2}} \rightarrow \frac{f \sin a \pm 2}{\frac{1}{2}} = \frac{4}{\frac{1}{2}} = 8$

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$$(1) \frac{(-x+1)(x+1)(-x-1)(x-2)}{(-x+1)(x+1)} = (-x-1)(x-2) = -x^2 + 12x - 2 =$$

$$-4x^2 + 12x + 0 \Rightarrow x_{max} = \frac{-b}{2a} = \frac{12}{-8} = -\frac{3}{2} \Rightarrow y_{max} = \frac{12 \cdot 12}{-8} = -18$$

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$$V(x+y) - V = \Delta x y \quad \Delta y = \frac{c}{a} = -\frac{r}{m} \quad x+y = \frac{m+r}{m}$$

$$\Rightarrow \frac{r_{m+4}}{m} - \frac{r_m}{m} = -\frac{1}{m} \Rightarrow r_{m+4} - r_m = -1 \Rightarrow + \Delta m = +14 \Rightarrow m = 7$$

$$\Rightarrow \Delta y = -\frac{r}{m} = -\frac{1}{7} \Rightarrow x+y = \frac{m+r}{m} = \frac{4}{7} = \frac{r}{7} \Rightarrow (x+y)^2 = \frac{4}{7} \Rightarrow x^2 + y^2 + 2xy = \frac{4}{7}$$

$$\Rightarrow x^2 + y^2 = \frac{4+4}{7} = \frac{8}{7}$$

$$\frac{\Delta y}{\Delta x} = \frac{c}{a} = r \Rightarrow y = \frac{r}{a} \Rightarrow \Delta y = \frac{r}{a} \Rightarrow \frac{\Delta y}{\Delta x} + \frac{r^2}{a^2} = \frac{\Delta y}{\frac{r}{a}} + \frac{r^2}{a^2} = \frac{\Delta y}{a} + \frac{r^2}{a^2}$$

$$= \frac{5^2 - 4^2}{a} \quad \frac{p=r}{s=a} \Rightarrow \frac{12-4(1)}{a} = \frac{8}{a} = 14$$

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$$y = r(r) + 1 = 1f \quad \frac{r}{1f} \quad y = r(-r) + 1 = f \Rightarrow \frac{r}{f} \quad \frac{0}{f} \Rightarrow c = f$$

$$1f = 9a + 3b + f \quad 1 = 9a + 3b + 4$$

$$f = 9a - 3b + f \rightarrow f = 9a - 3b + f$$

$$b-1 = 10a \Rightarrow a=1 \quad b=3 \Rightarrow y = x^2 + 3x + f$$

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$$\Delta y = \frac{-b}{2a} = \frac{-12}{-8} = \frac{3}{2}$$

$$y = 9x \rightarrow x = \frac{r}{9} + (m+1)x + m + 9 \rightarrow \frac{r}{9} + mx + m + 9 = 0 \rightarrow \Delta = b^2 - 4ac = m^2 - 4(m+1)$$

$$= m^2 - 4m - 4 = 0 \rightarrow \Delta = 16 - 4(-4) = 32 \rightarrow m = \frac{4 \pm \sqrt{32}}{2} = \frac{4 \pm 4\sqrt{2}}{2} = 2 \pm 2\sqrt{2}$$

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