

الف) $2x^3 + 4x^2 - 11x + 2 \mid \frac{x-1}{2x^2+5x-3} \rightarrow (x-1)(2x^2+5x-3) \neq 0 \rightarrow (x-1)(2x-1)(x+3) \neq 0$
 $\rightarrow D = R - \{-3, \frac{1}{2}, 1\}$ ✓

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ب) $2x^3 + 9x^2 + 10x + 3 \mid \frac{x+1}{2x^2+5x+3} \rightarrow (x+1)(2x^2+5x+3) \neq 0 \rightarrow (x+1)(2x+1)(x+3) \neq 0$
 $\rightarrow D = R - \{-3, -1, -\frac{1}{2}\}$ ✓

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الف) $x^3 - 2x^2 + 2x - 1 \neq 0 \mid \frac{x-1}{x^2-x+1} \rightarrow (x-1)(x^2-x+1) \neq 0 \rightarrow x \neq 1$
 $\rightarrow R - \{1\}$ ✓

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ب) $\frac{-x^2}{x^3-2x^2+x-1} \mid \frac{x-1}{x^2-x+1} \rightarrow (x-1)(x^2-x+1) \neq 0 \rightarrow x \neq 1$
 $\rightarrow D = (-\infty, -3] \cup (1, +\infty)$ ✓

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① $x^3 - \Delta(x-1) - 2x + \Delta \neq 0 \rightarrow x^3 - \Delta x + 0 - 2x + \Delta \neq 0 \rightarrow x^3 - 2x + \Delta \neq 0$
 $\rightarrow \Delta = 9 \rightarrow x = \frac{4 \pm \sqrt{2}}{2}$
 ② $x^3 - \Delta(1-x) - 2x + \Delta \neq 0 \rightarrow x^3 - \Delta + \Delta x - 2x + \Delta \neq 0 \rightarrow x^3 + 2x \neq 0$
 $\rightarrow \Delta = 9 \rightarrow x = \frac{-3 \pm \sqrt{5}}{2}$
 $R - \{1 \cup 2\} \rightarrow D = R - \{-3, 0, 1, 2\}$ ✓

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الف) $|2x+1| - |x+3| \neq 0 \rightarrow |2x+1| \neq |x+3| \rightarrow 4x^2+4x+1 \neq x^2+6x+9$
 $\rightarrow 3x^2-2x-8 \neq 0 \rightarrow \Delta = 4 - 4(-3)(-8) = 100 \rightarrow x = \frac{1 \pm 5}{3} \rightarrow D = R - \{-\frac{4}{3}, \frac{2}{3}\}$ ✓

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ب) $|2x+1| - |x+3| \geq 0 \rightarrow |2x+1| \geq |x+3| \rightarrow 4x^2+4x+1 \geq x^2+6x+9 \rightarrow 3x^2-2x-8 \geq 0$
 $\rightarrow x \geq \frac{2}{3} \text{ or } x \leq -\frac{4}{3}$
 $\rightarrow D = (-\infty, -\frac{4}{3}] \cup [\frac{2}{3}, +\infty)$ ✓

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الف) $x > 0$ ① $1 - \log \frac{x}{2} > 0 \rightarrow \log \frac{x}{2} < 1 \rightarrow x < 2$ ②
 ① $\cap$ ② = $(0, 2) = D$ ✓

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ب) $x > 0$ ① $1 - \log \frac{x}{2} > 0 \rightarrow \log \frac{x}{2} < 1 \rightarrow x < 2$ ②
 ① $\cap$ ② = $(\frac{1}{2}, +\infty) = D$ ✓

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$$x-1 > 0 \rightarrow x > 1 \rightarrow x > \frac{1}{y} \quad (1)$$

$$\log_0^{y-1} > 0 \rightarrow y-1 > 1 \rightarrow y > 2 \rightarrow x > 1 \quad (2)$$

$$\log_{\frac{1}{y}} \log_0^{(y-1)} > 0 \rightarrow \log_0^{y-1} > 1 \rightarrow y-1 > 2 \rightarrow y > 3 \rightarrow x > \frac{1}{y} \quad (3)$$

$$D = 1 \cap 2 \cap 3 \rightarrow D = [3, +\infty) \rightarrow D = (1, 2]$$

$$y \cos x + 1 > 0 \rightarrow y \cos x > -1 \rightarrow \cos x > -\frac{1}{y} \rightarrow D = \left(k\pi + \frac{\pi}{y}, k\pi + \frac{y\pi}{y} \right)$$

$$\frac{x-1}{x+1} > 0 \rightarrow \frac{-1}{+1-1} \rightarrow (-\infty, -1) \cup (1, +\infty) \quad (1)$$

$$D = (1) \cap (2) \rightarrow D = \mathbb{R} - [-1, 1]$$

$$\log_{\frac{x-1}{x+1}} > 0 \rightarrow \frac{x-1}{x+1} > 1 \rightarrow \emptyset \quad (2)$$

$$L_{x < -1}$$

$$D = (-\infty, -1)$$

$$\begin{array}{c|c} \text{موجب} & \text{موجب} \\ (+) & (-) \\ a+y & a+y \end{array}$$

$$\rightarrow a+y < 0 \rightarrow a < -y \quad a = -2$$

$$x = y \rightarrow 9a + 11 + 3a + b = 0 \rightarrow 12a + b + 11 = 0 \rightarrow a = \frac{-11-b}{12}$$

$$a < -2 \rightarrow \frac{-11-b}{12} < -2 \xrightarrow{\times 12} -11-b < -24 \rightarrow -b < -13 \rightarrow b > 13$$

$$b = 4$$

$$\Delta \leq 0 \rightarrow f(x) = x^2 - m^2 \leq 0$$

$$\Delta \leq 0, a > 0 \rightarrow \text{مباين بايد ناقصي با صفر}$$

$$f_m^2 - f \leq 0 \rightarrow m^2 - 1 \leq 0 \xrightarrow{\Delta = f} m = \pm \frac{y}{y} \rightarrow \frac{-1}{+1-1} \rightarrow D = [-1, 1]$$

$$1 - (-1) = 2 \rightarrow \text{جواب}$$

$$f - x^2 \geq 0 \rightarrow \Delta = 14 \rightarrow \frac{\pm f}{-r} \rightarrow \frac{-2}{-1+1} \rightarrow [-2, 2] \quad (1)$$

$$[x] + [-x] + 1 \neq 0 \rightarrow \text{مقلوب} \quad (2) \geq \quad D = (1) \cap (2) \rightarrow \{-2, -1, 0, 1, 2\}$$

$$\text{عدد صحیح}$$