

الف) $\frac{x+3}{2x^3+3x^2-11x+3}$

$2x^3+3x^2-11x+3$

$(x-1)(2x^2+5x-3)$

$\hookrightarrow x^2+5x-3 \Rightarrow (x+9)(x-1)$ ✓

$\hookrightarrow x = -3, \frac{1}{2}, 1$

$\Rightarrow D_f = \mathbb{R} - \{-3, \frac{1}{2}, 1\}$

$2x^3+3x^2-11x+3 \mid x-1$
 $-2x^3+2x^2$
 $5x^2-11x+3$
 $-5x^2+5x$
 $-6x+3$
 $+6x-3$

$5x^2-11x+3$

$-5x^2+5x$

$-6x+3$

$+6x-3$

ب) $\frac{x+3}{2x^3+9x^2+1 \cdot x+3}$

$(x+1)(2x^2+7x+3)$

$\hookrightarrow x^2+7x+3 \Rightarrow (x+9)(x+1)$ ✓

$\hookrightarrow x = -1, -3, -\frac{1}{2}$

$\Rightarrow D_f = \mathbb{R} - \{-1, -3, -\frac{1}{2}\}$

$2x^3+9x^2+1 \cdot x+3 \mid x+1$
 $-2x^3-2x^2$
 $11x^2+1 \cdot x+3$
 $-11x^2-11x$
 $12x+3$
 $-12x-12$

$11x^2+1 \cdot x+3$

$-11x^2-11x$

$12x+3$

$-12x-12$

الف) $\frac{x+3}{x^3-2x^2+2x-1}$

$(x-1)(x^2-x+1)$

ΔC. → لا يشارك

$\hookrightarrow D_f = \mathbb{R} - \{1\}$

$x^3-2x^2+2x-1 \mid x-1$
 $-x^3+x^2$
 $-x^2+2x-1$
 $+x^2-x$
 $x-1$
 $-x+1$

$-x^2+2x-1$

$+x^2-x$

$x-1$

$-x+1$

ب) $\sqrt{\frac{x+3}{2x^3-2x^2+2x-1}}$

$\begin{array}{c|c|c|c|c} & -3 & & 1 & \\ \hline & + & 0 & - & 0 & + \end{array}$

$D_f = [-\infty, -3] \cup (1, +\infty)$

ن به نام خدا

$$y = \frac{2}{x^2 - 5|x-1| - 2x + 5}$$

(ص)

$$\textcircled{1} x \geq 1 \rightarrow x^2 - 5x + 5 - 2x + 5 = 0 \rightarrow x^2 - 7x + 10 = 0 \rightarrow x = 5, 2$$

$$\textcircled{2} x < 1 \rightarrow x^2 + 3x = 0 \rightarrow x(x+3) = 0 \rightarrow x = -3, 0$$

(س)

$$\hookrightarrow D_f = \mathbb{R} - \{-3, 0, 2, 5\}$$

الف) $\frac{x+3}{|2x+1| - |x+3|} \rightarrow |2x+1| = |x+3|$

(ص)

$$\hookrightarrow x^2 + 4x + 4 = x^2 + 4x + 9 \Rightarrow 3x^2 - 2x - 5 = 0$$

(س)

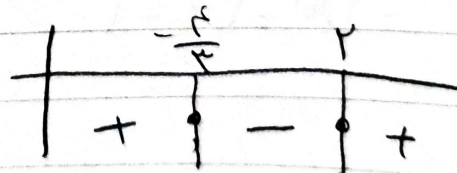
$$x^2 - 2x - 5 \Rightarrow (x-4)(x+5) \Rightarrow x = 4, -5$$

$$D_f = \mathbb{R} - \{-5, 4\}$$

ب) $\sqrt{|2x+1| - |x+3|} \Rightarrow |2x+1| - |x+3| \geq 0 \rightarrow |2x+1| \geq |x+3|$

$$x^2 + 4x + 4 \geq x^2 + 4x + 9 \Rightarrow 3x^2 - 2x - 5 \geq 0$$

$$\hookrightarrow x^2 - 2x - 5 \Rightarrow x = 4, -5$$



$$D_f = (-\infty, -5] \cup [4, \infty)$$

الف) $y = \log_3(1 - \log_3 x)$ $x > 0$

(و)

$$1 - \log_3 x > 0 \rightarrow \log_3 x < 1 \Rightarrow x < 3^1 \Rightarrow x < 3$$

(س)

$$D_f = (0, 3)$$

Date

No

ب) $y = \log_r (1 - \log_{\frac{1}{r}} x)$ $x > \frac{1}{r}$

(4)

$1 - \log_{\frac{1}{r}} x > 0 \Rightarrow \log_{\frac{1}{r}} x < 1 \Rightarrow x > \frac{1}{r}$

$D_f = (\frac{1}{r}, +\infty)$

$\sqrt{\log_{0.5} \log_{\frac{1}{2}} (2x-1)}$ $2x-1 > 0 \Rightarrow 2x > 1 \Rightarrow x > \frac{1}{2}$

(5)

$\log_{\omega} (2x-1) > 0 \Rightarrow 2x-1 > \omega^0 \Rightarrow 2x > 1+1 \Rightarrow x > 1$

(5)

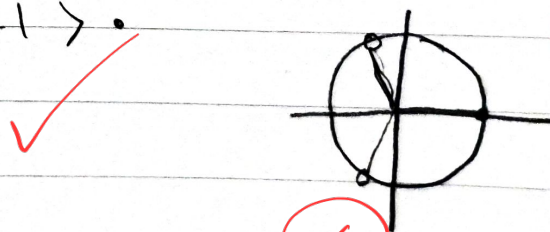
$\log_{0.5} \log_{\frac{1}{2}} (2x-1) > 0 \Rightarrow \log_{\frac{1}{2}} (2x-1) \leq (\frac{1}{r})^0 \Rightarrow \log_{\frac{1}{2}} (2x-1) \leq 1$

$2x-1 \leq \omega \Rightarrow 2x \leq 9 \Rightarrow x \leq 5$

$D_f = (1, 5]$

الف) $\log (2 \cos x + 1) \Rightarrow 2 \cos x + 1 > 0$

$2 \cos x > -1 \Rightarrow \cos x > -\frac{1}{2}$



(4)

$D_f = (2k\pi - \frac{\pi}{3}, 2k\pi + \frac{\pi}{3})$

(5)

ب) $\sqrt{\log \frac{x-1}{x+1}} \Rightarrow \frac{x-1}{x+1} > 0 \Rightarrow \frac{-1}{+} \frac{+1}{-} \Rightarrow (-\infty, -1) \cup [1, +\infty)$

$\log \frac{x-1}{x+1} > 0 \Rightarrow \frac{x-1}{x+1} \geq 1 \Rightarrow \frac{-x}{x+1} \geq 0 \Rightarrow (-\infty, -1)$

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

$\hookrightarrow D_f = (-\infty, 3] \Rightarrow \textcircled{1} \text{ ملاحظة } \Rightarrow a+r = \dots \Rightarrow a = -2$

$f(x) = \dots -2 + b = \dots \Rightarrow b = 4$

(5)

(1)

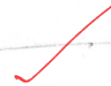
نشان بده

$$f(x) = \sqrt{x^2 + 2x + 2 - m^2} \rightarrow x^2 + 2x + 2 - m^2 \geq 0$$

(4)

$$D_f = \mathbb{R} \rightarrow \Delta = 0 \text{ و } a > 0$$

رابطه همواره برقرار است



(5)

$$\rightarrow b^2 - 4ac = 0 \Rightarrow -4 + 4m^2 = 0 \Rightarrow m^2 = 1$$

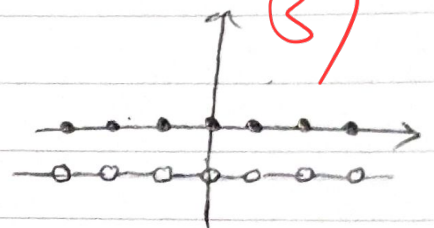
$$\rightarrow m = \pm 1 \quad \xrightarrow[\text{min, max}]{\text{افتتاح}} \quad 2$$

$$f(x) = \frac{\sqrt{4 - x^2}}{[x] + [-x] + 1} \rightarrow 4 - x^2 \geq 0 \rightarrow -2 \leq x \leq 2$$

(4)

$$[x] + [-x] + 1 = 0 \rightarrow [x] + [-x] = -1$$

$$\rightarrow D_f = \{-2, -1, 0, 1, 2\}$$



(5)