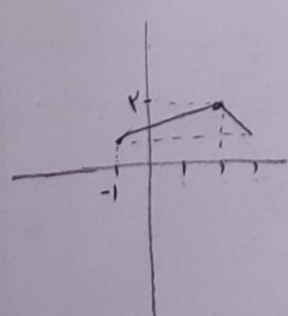
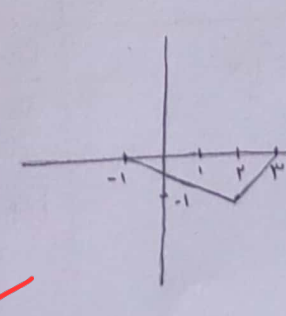


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$4x^3 - 2x^2 + 31x - 15 \div x - 1 = 4x^2 - 14x + 15$ لریشه ها: $1/5, 3/2$ $Df = \mathbb{R} - \{1/5, 3/2, 1\}$ (الف) ب	$3x^3 - x^2 - 8x - 4 \div x + 1 = 3x^2 - 4x - 4$ لریشه ها: $2, -2/3$ $Df = \mathbb{R} - \{-2/3, 2, -1\}$ (الف) ب	۱		
$3 - 2x > 0 \quad 2x \leq 3 \quad x \leq \frac{3}{2}$ $x \neq \sqrt{3 - 2x} \rightarrow x^2 \neq 3 - 2x \rightarrow x^2 + 2x \neq 3 \rightarrow x(x + 2) \neq 3 \rightarrow x \neq 1 \text{ و } -3$ $Df = (-\infty \frac{3}{2}] - \{1, -3\}$ جواب زائد دارد (الف) ب	$3x - 2 > 0 \quad 3x > 2 \quad x > \frac{2}{3}$ $x \neq \sqrt{3x - 2} \rightarrow x^2 \neq 3x - 2 \rightarrow x^2 - 3x + 2 \neq 0 \rightarrow x(x - 3) \neq -2 \rightarrow x \neq 1 \text{ و } 2$ $Df = [\frac{2}{3} + \infty) - \{1, 2\}$ (الف) ب	۲		
$y \cos x - 1 \neq 0$ $\cos x \neq \frac{1}{y}$  $Df = \mathbb{R} - \{y \mid x + \frac{\pi}{2}, y \mid x + \frac{3\pi}{2}\}$ (الف)	$y \sin x + 1 \neq 0$ $\sin x \neq -\frac{1}{y}$  $Df = \mathbb{R} - \{y \mid x + \frac{\pi}{6}, y \mid x - \frac{5\pi}{6}\}$ (ب)	$\cot x \neq 1$ $\sin x \neq 0$  $Df = \mathbb{R} - \{kx + \frac{\pi}{4}, kx\}$ (ج)	۳	
$(x - 2)(x - 3) > 0$ $\frac{2}{+} \quad \frac{3}{-}$ $+ \quad - \quad +$ $Df = (-\infty 2) \cup (3 + \infty)$ (الف)	$(x - 1)(x - 5) < 0$ $\frac{1}{+} \quad \frac{5}{-}$ $+ \quad - \quad +$ $Df = (1 \ 5)$ (ب)	$(x + 1)(x + 5) > 0$ $\frac{-5}{+} \quad \frac{-1}{-}$ $+ \quad - \quad +$ $Df = (-\infty -5] \cup [-1 + \infty)$ (ج)	$(x - 1)(x - 4) \leq 0$ $\frac{1}{+} \quad \frac{4}{-}$ $+ \quad - \quad +$ $Df = [1 \ 4]$ (د)	۴
$\frac{(x - 1)(x - 2)}{(x - 5)} < 0$ $\frac{1}{-} \quad \frac{2}{+} \quad \frac{5}{-}$ $- \quad + \quad - \quad +$ $Df = (-\infty 1) \cup (2 \ 5)$ (الف) ب	$\frac{(x - 1)(x + 1)}{(x - 1)(x - 5)} > 0$ $\frac{-1}{+} \quad \frac{1}{-} \quad \frac{5}{-}$ $+ \quad - \quad - \quad +$ $Df = (-\infty -1] \cup (5 + \infty)$ (الف) ب	۵		

$\sqrt{\frac{(x-1)(x-3)}{x^2-1}}$ $\frac{1}{-\frac{1}{2} - \frac{3}{2} +}$ $Df = [3, +\infty)$	$x^2-1 \neq 0 \rightarrow x^2 \neq 1 \rightarrow x \neq \pm 1$ $Df = \mathbb{R} - \{1, -1\}$	6																
$x^2-3x > 0$ $x(x-3) > 0$ $\frac{0}{+} \frac{3}{-} \frac{+}{+}$ $Df = (-\infty, 0) \cup (3, +\infty)$	$14-x^2 > 0 \rightarrow x^2 < 14$ $x < \sqrt{14} \quad x > -\sqrt{14}$ $ x < \sqrt{14}$ $ x \neq \sqrt{14} \rightarrow x \neq \pm \sqrt{14}$ $Df = (-\sqrt{14}, \sqrt{14}) - \{\pm \sqrt{14}\}$	7																
$\frac{x(x-1)}{x(x+1)}$ $\frac{-1}{+} \frac{0}{-} \frac{1}{-} \frac{+}{+}$	$(x-4)(x-5) > 0$ $\frac{4}{+} \frac{5}{-} \frac{+}{+}$ $\sqrt{4-x^2} > 0$ $4-x^2 > 0$ $(4-x)(4+x) > 0$ $x \neq 1 \quad x > 0$ $Df = (0, 4] - \{1\}$	8																
$\frac{x(x-1)}{x(x+1)}$ $\frac{-1}{+} \frac{0}{-} \frac{1}{-} \frac{+}{+}$	<table><tr><td></td><td>-1</td><td>0</td><td>1</td></tr><tr><td>x^2-x</td><td>+</td><td>-</td><td>-</td></tr><tr><td>x^2+x</td><td>+</td><td>+</td><td>+</td></tr><tr><td>$p(x)$</td><td>+</td><td>-</td><td>-</td></tr></table>		-1	0	1	x^2-x	+	-	-	x^2+x	+	+	+	$p(x)$	+	-	-	9
	-1	0	1															
x^2-x	+	-	-															
x^2+x	+	+	+															
$p(x)$	+	-	-															
$x > f(x) \rightarrow (2, 3]$ $f(x) > x \rightarrow (-2, -1]$ $Df = (-2, -1] \cup (2, 3]$		10																
		11																