

الف) $4x^2 - 6x + 14n - 15 \div x - 1 = 4x^2 - 14x + 15 \Rightarrow \frac{x+5}{(x-1)(4x^2-14x+15)} = \frac{x+5}{(x-1)(4x-5)(x-3)}$

$D_f = \mathbb{R} - \left\{1, \frac{5}{4}, 3\right\}$

ب) $3x^2 - x^2 - 14x - 5 \div x + 1 = 2x^2 - 14x - 5 \Rightarrow \frac{x+3}{(x+1)(2x^2-14x-5)} = \frac{x+3}{(x+1)(2x-1)(x-\frac{5}{2})}$
 $\Rightarrow x^2 - 7x - 2.5 = (x-4)(x+1)$
 $x = \frac{7}{2} = 3.5$
 $x = -1$
 $D_f = \mathbb{R} - \left\{-1, -1, \frac{5}{4}\right\}$

الف) $x \neq \sqrt{3-2x}$ $3-2x \geq 0$
 $x^2 \neq 3-2x$ $3 \geq 2x$
 $x(x+2) \neq 3$ $x \leq 1.5$
 $\begin{matrix} 1 \times 3 \\ -3 \times 1 \end{matrix}$

$D_f = (-\infty \frac{3}{2}] - \{1, -3\}$

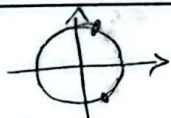
ب) $x \neq \sqrt{3x-2}$ $3x-2 \geq 0$
 $x^2 \neq 3x-2$ $3x \geq 2$
 $x(2-x) \neq -2$ $x \geq \frac{2}{3}$
 $\begin{matrix} 1 \times -2 \\ 2 \times -1 \end{matrix}$

$D_f = [\frac{2}{3} + \infty) - \{1, 2\}$

الف) $2 \cos x \neq 1$

$\cos x \neq \frac{1}{2}$

$D_f = \mathbb{R} - \left\{2k\pi \pm \frac{\pi}{3}\right\}$



ج) $\cot x \neq 1$

$\frac{\cos x}{\sin x} \neq 1$

$D_f = \mathbb{R} - \left\{k\pi, k\pi + \frac{\pi}{4}\right\}$



د) $2 \sin^2 x + 3$
 $\sin x \neq \pm \frac{\sqrt{5}}{2}$



$D_f = \left\{k\pi \pm \frac{\pi}{3}\right\}$

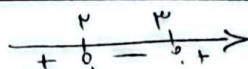
ب) $2 \sin x \neq -1$

$\sin x \neq -\frac{1}{2}$



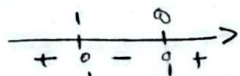
$D_f = \mathbb{R} - \left\{2k\pi - \frac{\pi}{6}, 2k\pi - \frac{5\pi}{6}\right\}$

الف) $(n-2)(n-3) > 0$



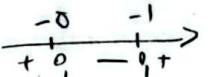
$D_f = (-\infty - 2) \cup (3 + \infty)$

ب) $(n-1)(n-5) < 0$



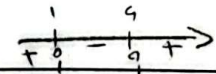
$D_f = (1 \ 5)$

ج) $(n+1)(n+5) \geq 0$



$D_f = (-\infty - 5] \cup [-1 + \infty)$

د) $(n-1)(n-4) \leq 0$



$D_f = [1 \ 4]$

الف) ... < 0

$D_f = (-\infty 1) \cup (2 \infty)$

ب) $\frac{n^2-1}{n^2-4n+3} \geq 0$

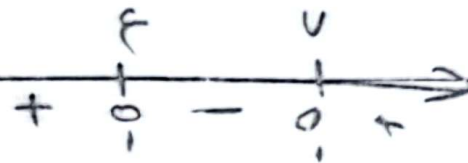
$D_f = (-\infty -1] \cup (3 + \infty)$

	1	2	3	4
$(n-2)(n-1)$	+	-	+	+
$n-3$	-	-	-	+
	-	+	-	+

	-1	1	3	4
$(n+1)(n-1)$	+	-	+	+
$(n-1)(n-3)$	+	+	-	+
	+	-	-	+

الف) $\frac{(n-1)(n-2)}{n^2-1} \geq 0 \quad D_f = [1, +\infty)$ <table border="1"> <tr><td>$(n-1)(n-2)$</td><td>+</td><td>0</td><td>-</td><td>0</td><td>+</td></tr> <tr><td>$n-1$</td><td>-</td><td>0</td><td>+</td><td></td><td>+</td></tr> <tr><td></td><td>-</td><td>0</td><td>-</td><td>0</td><td>+</td></tr> </table>	$(n-1)(n-2)$	+	0	-	0	+	$n-1$	-	0	+		+		-	0	-	0	+	ب) $n^2-1 \neq 0$ $n^2 \neq 1$ $n \neq \pm 1$ $D_f = \mathbb{R} - \{\pm 1\}$																								
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	-	0	-	0	+																																						
الف) $n^2-3n > 0 \quad D_f = (-\infty, 0) \cup (3, +\infty)$ $n(n-3)$ <table border="1"> <tr><td>$n(n-3)$</td><td>+</td><td>0</td><td>-</td><td>0</td><td>+</td></tr> <tr><td>n</td><td>+</td><td>0</td><td>-</td><td>0</td><td>+</td></tr> <tr><td>$n-3$</td><td>-</td><td>0</td><td>+</td><td></td><td>+</td></tr> </table> $D_f = (-\infty, 0) \cup (3, +\infty) - \{\pm 1\}$	$n(n-3)$	+	0	-	0	+	n	+	0	-	0	+	$n-3$	-	0	+		+	ب) $\frac{n^2-5n+4}{n-2} \geq 0$ <table border="1"> <tr><td>$(n-4)(n-1)$</td><td>+</td><td>0</td><td>-</td><td>0</td><td>+</td></tr> <tr><td>$n-2$</td><td>-</td><td>0</td><td>+</td><td></td><td>+</td></tr> <tr><td></td><td>-</td><td>0</td><td>-</td><td>0</td><td>+</td></tr> </table> $D_f = (4, +\infty)$ ج) $14-n^2 > 0$ $14 > n^2$ $14 > n > -4$ $n > 2 \Rightarrow n > 2 \text{ or } n < -2$ $n \neq 3 \Rightarrow n \neq \pm 3$	$(n-4)(n-1)$	+	0	-	0	+	$n-2$	-	0	+		+		-	0	-	0	+						
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$n-2$	-	0	+		+																																						
	-	0	-	0	+																																						
$\frac{n^2-n}{n^2+n}$ <table border="1"> <tr><td>$n(n-1)$</td><td>+</td><td>0</td><td>+</td><td>0</td><td>-</td><td>0</td><td>+</td></tr> <tr><td>$n(n+1)$</td><td>+</td><td>0</td><td>-</td><td>0</td><td>+</td><td></td><td>+</td></tr> <tr><td></td><td>+</td><td>0</td><td>-</td><td>0</td><td>-</td><td>0</td><td>+</td></tr> </table>	$n(n-1)$	+	0	+	0	-	0	+	$n(n+1)$	+	0	-	0	+		+		+	0	-	0	-	0	+	د) $\frac{n^2-4}{n^2+4}$ <table border="1"> <tr><td>$n(n-2)$</td><td>+</td><td>0</td><td>-</td><td>0</td><td>+</td></tr> <tr><td>$n(n+4)$</td><td>+</td><td>0</td><td>-</td><td>0</td><td>+</td></tr> <tr><td></td><td>+</td><td>0</td><td>-</td><td>0</td><td>+</td></tr> </table>	$n(n-2)$	+	0	-	0	+	$n(n+4)$	+	0	-	0	+		+	0	-	0	+
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$f(n) \neq 0 \rightarrow n \neq \pm 1$ $n-f(n) = 0 \rightarrow n = f(n) \rightarrow n = (-1, 3)$ <table border="1"> <tr><td>$n-f(n)$</td><td>+</td><td>0</td><td>+</td><td>0</td><td>-</td><td>0</td><td>+</td></tr> <tr><td>$f(n)$</td><td>+</td><td>0</td><td>-</td><td>0</td><td>+</td><td></td><td>+</td></tr> <tr><td></td><td>+</td><td>0</td><td>-</td><td>0</td><td>-</td><td>0</td><td>+</td></tr> </table>		$n-f(n)$	+	0	+	0	-	0	+	$f(n)$	+	0	-	0	+		+		+	0	-	0	-	0	+																		
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$$V) \Rightarrow x^2 - 11x + 11 \geq 0$$



$$(-\infty, f] \cup [v, +\infty)$$

$$x \neq 1, x > 0$$

$$\sqrt{16 - x^2} > 0$$

$$16 > x^2$$

$$-4 < x < 4$$



$$D_f = (0, f] - \{1\}$$

PAYCO

DATE :