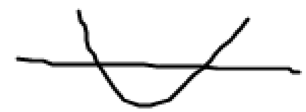
PAG. 144 N 231

$$\frac{3}{x-2} + x + 2 \geq 0$$

$$\frac{3 + x(x-2) + 2(x-2)}{x-2} \geq 0 \qquad \frac{3 + x^2 \cancel{-2x} \cancel{+2x} - 4}{x-2} \geq 0$$

N] D] $\dfrac{x^2 - 1}{x-2} \geq 0$

N] $x^2 - 1 > 0$



$\Delta > 0$

$x = \pm 1$ $\qquad x < -1 \ \vee \ x > 1$

D] $x - 2 > 0$ $\qquad x > 2$

		-1		1		2	
N]	$+$	0	$-$	0	$+$		$+$
D]	$-$		$-$		$-$	$\times$	$+$
	$-$	0	$+$	0	$-$	$\times$	$+$

$$\boxed{-1 \leq x \leq 1 \ \vee \ x > 2}$$

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$$-\frac{2}{x-3}-x<0 \qquad \frac{-2-x(x-3)}{x-3}<0$$

CAMBIO SEGNI

$$\frac{-2-x^2+3x}{x-3}<0 \longrightarrow \frac{x^2-3x+2}{x-3}>0$$

N] $x^2-3x+2>0$

$\Delta = 9-8=1$

$$x=\frac{3\pm1}{2}= \begin{cases}1\\2\end{cases}$$

$x<1 \vee x>2$

D] $x-3>0 \quad x>3$

		1		2		3	
N]	+	0	−	0	+		+
D]	−		−		−	X	+
	−	0	+	0	−	X	+

$$\boxed{1<x<2 \ \vee\ x>3}$$

255)

$$\frac{x+2}{x-3} < \frac{1}{x+2} \qquad \frac{x+2}{x-3} - \frac{1}{x+2} < 0$$

$$\frac{(x+2)^2 - (x-3)}{(x-3)(x+2)} < 0$$

$$\frac{x^2+4x+4-x+3}{(x-3)(x+2)} < 0$$

$$\frac{x^2+3x+7}{(x-3)(x+2)} < 0$$

$$\frac{\boxed{N}\; x^2+3x+7}{\underbrace{(x-3)}_{\boxed{D_1}}\underbrace{(x+2)}_{\boxed{D_2}}} < 0$$

$\boxed{N}$ $x^2+3x+7>0$

$\Delta = 9-28<0$

$\forall x \in \mathbb{R}$

PER OGNI $x \in \mathbb{R}$ IL NUMERATORE È POSITIVO

$\boxed{D_1}$ $x-3>0 \quad x>3$

$\boxed{D_2}$ $x+2>0 \quad x>-2$

		-2		3	
N	$+$		$+$		$+$
D_1	$-$		$-$	$\times$	$+$
D_2	$-$	$\times$	$+$		$+$
	$+$	$\times$	$-$	$\times$	$+$

$$\boxed{-2<x<3}$$

256

$$\frac{3}{\underset{(x-1)^2}{x^2-2x+1}}+\frac{3+x}{x-1}>0$$

$$\frac{3+(3+x)(x-1)}{(x-1)^2}>0$$

$$\frac{\cancel{3}+3x-\cancel{3}+x^2-x}{(x-1)^2}>0$$

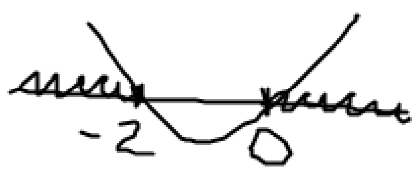
$$\frac{x^2+2x}{(x-1)^2}>0$$

$$\frac{x^2+2x}{(x-1)^2}>0 \qquad \begin{matrix} N \\ D \end{matrix}$$

N] $x^2+2x>0$

$x(x+2)=0 \quad \Delta>0$

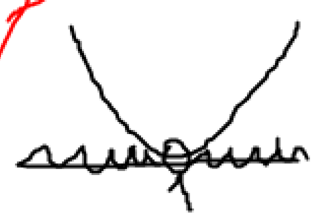
$x=0 \vee x=-2$



$x<-2 \vee x>0$

D] $(x-1)^2>0$

$\boxed{\forall x\neq 1}$



$x^2-2x+1>0$

$\Delta=0$

NON NECESSARIO

	-2		0		1	
N] $+$	0	$-$	0	$+$		$+$
D] $+$		$+$		$+$	$\times$	$+$
$+$	0	$-$	0	$+$	$\times$	$+$

$\boxed{x<-2 \vee 0<x<1 \vee x>1}$

oppure

$\boxed{x<-2 \vee (x>0 \wedge x\neq 1)}$