Es 24 pag 769

$$\sqrt{4x^2+x^4} + \sqrt[4]{\frac{(1-x)}{(-x)^3}}$$

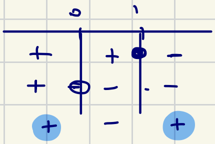
C.E. $\begin{cases} 4x^2+x^4 \geq 0 \\ \dfrac{1-x}{(-x)^3} \geq 0 \end{cases}$ $\begin{cases} \forall x \in \mathbb{R} \\ x<0 \ \vee \ x \geq 1 \end{cases}$ $\rightsquigarrow$ $\boxed{x<0 \quad \vee \quad x \geq 1}$

(I) $x^2(4+x^2) \geq 0$ $\quad f_1 \geq 0 \quad x^2 \geq 0 \quad \forall x \in \mathbb{R}$ $\quad f_2 \geq 0 \quad 4+x^2 \geq 0 \quad \forall x \in \mathbb{R}$ $\quad \| \quad \forall x \in \mathbb{R}$

(II) $\dfrac{1-x}{(-x)^3} \geq 0$

$N \geq 0 \quad 1-x \geq 0 \rightsquigarrow x \leq 1$

$D > 0 \quad (-x)^3 > 0 \rightsquigarrow -x > 0 \rightsquigarrow x < 0$



$\boxed{x<0 \quad \vee \quad x \geq 1}$ $\quad (-\infty; 0) \cup [1, +\infty)$

Es 38 pag 770

$$\sqrt[3]{y^3(1+y)^6} \rightsquigarrow$$ Usiamo la proprietà invariantiva per abbassare gli esponenti

$$\sqrt[n]{a^p} = \sqrt[n \cdot m]{(a^p)^m}$$

solo se $y(1+y)^2 \geq 0 \rightsquigarrow y \geq 0 \quad \circ \quad y=-1$

$$\sqrt[3 \cdot 1]{[y(1+y)^2]^3} \overset{p.i.}{\boxed{=}} y(1+y)^2$$

$$\sqrt[8]{x^4a^8y^2} = \sqrt[2 \cdot 4]{(x^2a^4y)^2} \overset{p.i.}{\boxed{=}} \sqrt[4]{x^2a^4|y|}$$

C.E. $x^4a^8y^2 \geq 0 \rightsquigarrow \forall a,x,y \in \mathbb{R}$

Es 50 pag 470

$$\sqrt{\frac{9x^2-12x+4}{9x^4}} = \sqrt{\frac{(3x-2)^2}{9x^4}} = \sqrt{\left(\frac{3x-2}{3x^2}\right)^2}$$

P.i

$$\boxed{=} \frac{|3x-2|}{3x^2}$$

C.E. $x \neq 0$ (Denominatore)

Es 53 pag 470

$$3\sqrt[6]{(x^2-2x+1)^3} - 2\sqrt[4]{(x-1)^4} =$$

$$3\sqrt[6]{(x-1)^6} - 2\sqrt[4]{(x-1)^4} =$$

$$3|x-1| - 2|x-1| = |x-1|$$