

ESERCIZIO n. 1

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PROVA n.1

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

$$\cancel{x^3} - \frac{3}{2}\cancel{x^2} > x + \cancel{x^3} - \frac{3}{2}\cancel{x^2} + \frac{3}{4}x - \frac{1}{8} \Rightarrow x + \frac{3}{4}x < \frac{1}{8}$$

$$8x + 6x < 1 \Rightarrow 14x < 1 \Rightarrow x < \frac{1}{14}$$

PROVA n.2

$$x + \left(\frac{1}{2}x - 1 \right)^3 < \frac{x^2}{4} \left(\frac{x}{2} - 3 \right)$$

$$x + \cancel{\frac{1}{8}x^3} - \frac{3}{4}\cancel{x^2} + \frac{3}{2}x - 1 < \cancel{\frac{1}{8}x^3} - \frac{3}{4}\cancel{x^2} \Rightarrow x + \frac{3}{2}x < 1$$

$$2x + 3x < 1 \Rightarrow 5x < 1 \Rightarrow x < \frac{1}{5}$$