

Esercitazione sulle equazioni binomie nel campo reale

$$1) \quad \frac{x^4}{2} - 8 = 0 \quad S = \{-2; 2\}$$

$$2) \quad \frac{x^2}{3} + \frac{1}{x^3} = 0 \quad \text{Con } x \neq 0, S = \{-\sqrt[5]{3}\}$$

$$3) \quad 5x^3 + \frac{1}{25} = 0 \quad S = \left\{-\frac{1}{5}\right\}$$

$$4) \quad (2x+3)^6 - 1 = 0 \quad S = \{-2; -1\}$$

$$5) \quad x^2 - \frac{1}{4x^2} = 0 \quad \text{con } x \neq 0, S = \left\{-\frac{\sqrt{2}}{2}; \frac{\sqrt{2}}{2}\right\}$$

$$6) \quad m^2 x^4 + 1 = -m^2, \text{ con } m \in \mathbb{R} \quad \forall m \in \mathbb{R}, S = \emptyset$$

$$7) \quad m^3 x^3 - 8 = 0, \text{ con } m \in \mathbb{R} \quad \text{Con } m=0, S = \emptyset; \text{ con } m \neq 0, S = \left\{\frac{2}{m}\right\}$$

$$8) \quad m^3 x^6 + 27 = 0, \text{ con } m \in \mathbb{R} \quad \text{Con } m=0 \vee m>0, S = \emptyset; \text{ con } m<0, S = \left\{-\sqrt{-\frac{3}{m}}; \sqrt{-\frac{3}{m}}\right\}$$

$$9) \quad (m^2 - 1)^2 x^4 - m^4 = 0$$

$$\text{Con } m=-1 \text{ oppure } m=1, S = \emptyset. \text{ Con } m \neq \pm 1, S = \left\{-\frac{|m|}{\sqrt{|m^2-1|}}; \frac{|m|}{\sqrt{|m^2-1|}}\right\}$$

$$10) \quad m\sqrt{m}x^8 - \sqrt[3]{m^4} = 0, \text{ con } m \in \mathbb{R} \quad [\text{Con } m=0, \forall x \text{ reale}; \text{ con } m>0, S = \left\{-\sqrt[48]{\frac{1}{m}}; \sqrt[48]{\frac{1}{m}}\right\}]$$