

Semplifica i seguenti radicali:

$$1. \quad \sqrt[12]{(-3)^4} = \sqrt[12]{3^4} = \sqrt[3]{3}$$

$$2. \quad \sqrt[3]{0,008} = \sqrt[3]{(0,2)^3} = 0,2$$

$$3. \quad \sqrt[4]{\frac{25}{16}} = \sqrt[4]{\left(\frac{5}{4}\right)^2} = \sqrt{\frac{5}{4}}$$

$$4. \quad \sqrt[12]{7^6 \cdot 8^4} = \sqrt[12]{(7 \cdot 2^2)^6} = \sqrt{7 \cdot 2^2} = \sqrt{28}$$

$$5. \quad \sqrt[16]{\frac{49 \cdot 5^4}{3^8}} = \sqrt[16]{\left(7 \cdot \frac{5^2}{3^4}\right)^2} = \sqrt[8]{7 \cdot \frac{25}{81}} = \sqrt[8]{\frac{175}{81}}$$

$$6. \quad \sqrt[10]{\left(\frac{125}{9}\right)^5 : \left(\frac{5}{3}\right)^{10}} = \sqrt[10]{\frac{5^{15}}{3^{10}} \cdot \frac{3^{10}}{5^{10}}} = \sqrt[10]{5^5} = \sqrt{5}$$

$$7. \quad \sqrt[12]{x^3} = \sqrt[4]{x} \quad C.E.: x \geq 0$$

$$8. \quad \sqrt[8]{x^2} = \sqrt[4]{|x|} \quad C.E.: \forall x \in \mathbb{R}$$

$$9. \quad \sqrt[4]{a^2 - 4a + 4} = \sqrt[4]{(a - 2)^2} = \sqrt{|a - 2|} \quad C.E.: \forall a \in \mathbb{R}$$

$$10. \quad \sqrt[4]{a^4 + 2a^2 + 1} = \sqrt[4]{(a^2 + 1)^2} = \sqrt{a^2 + 1} \quad C.E.: \forall a \in \mathbb{R}$$

$$11. \quad \sqrt[6]{4y^2 + 9 + 12y} = \sqrt[6]{(2y + 3)^2} = \sqrt[3]{|2y + 3|} \quad C.E.: \forall y \in \mathbb{R}$$

$$12. \quad \sqrt[15]{(x + 5)^{10}} = \sqrt[3]{(x + 5)^2} \quad C.E.: \forall x \in \mathbb{R}$$