

P. e Rad.: Con. Serie 10Regole Radicali:

$$1) a) \sqrt{\left(\frac{16}{25}\right)^{-3}} = \left(\sqrt{\frac{16}{25}}\right)^{-3} = \left(\frac{4}{5}\right)^{-3} = \left(\frac{5}{4}\right)^3 = \frac{125}{64}$$

$$b) 2 \cdot \sqrt[3]{\left(\frac{1}{64}\right)^{-2}} = 2 \cdot \sqrt[3]{64^2} = 2 \sqrt[3]{2^6} = 2 \cdot 2^2 = 2^5$$

$$c) \sqrt{\left(\frac{9}{16}\right)^{-3}} = \sqrt{\left(\frac{16}{9}\right)^3} = \sqrt{\left(\frac{2^4}{3^2}\right)^3} = \sqrt{\frac{2^{12}}{3^6}} = \frac{2^6}{3^3}$$

Regole Potenze

$$\left(\frac{25}{16}\right)^{3/2} = \left(\frac{5^2}{2^4}\right)^{3/2} = \frac{5^3}{2^6} = \frac{125}{64}$$

$$2 \cdot 64^{2/3} = 2 \cdot (2^6)^{2/3} = 2 \cdot 2^4 = 2^5$$

$$\left(\frac{16}{9}\right)^{3/2} = \left(\frac{2^4}{3^2}\right)^{3/2} = \frac{2^6}{3^3}$$

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

$$(x + y^{1/2})(x - y^{1/2}) = \\ = x^2 - y$$

$$3) (\sqrt{a^3} - \sqrt{b})(\sqrt{a^3} + \sqrt{b}) = \\ \sqrt{a^6} - b = a^3 - b$$

$$a^{6/2} - b = a^3 - b$$

$$4) \sqrt[12]{(8^4)^{-2}} = \sqrt[12]{(2^3)^{-8}} = \\ = \sqrt[12]{2^{-24}} = 2^{-2}$$

$$\left[(8^{4/6})^{1/2} \right]^{-2} = 8^{-2/3} = \\ = (2^3)^{-2/3} = 2^{-2}$$

$$5) \frac{\sqrt{8^{-2}}}{2^{-3}} = \frac{\sqrt{(2^3)^{-2}}}{2^{-3}} = \frac{2^{-3}}{2^{-3}} = \\ = 2^0 = 1$$

$$\frac{(8^{1/2})^{-2}}{2^{-3}} = \frac{8^{-1}}{2^{-3}} = \frac{(2^3)^{-1}}{2^{-3}} = \\ = \frac{2^{-3}}{2^{-3}} = 2^0 = 1$$

$$6a) x^6 + 2x^3 \cdot x^{-1/6} + x^{-2/6} = x^6 + 2x^{17/6} + x^{-1/3}$$

$$6b) (3 \times 5)^3 = 27 \times 15$$

$$\begin{aligned}
 7) \quad & 4^{3/2} + 9^{1/2} - 125^{2/3} + 8^{1/3} = \\
 & = \sqrt{4^3} + \sqrt{9} - \sqrt[3]{125^2} + \sqrt[3]{8} = \\
 & = \sqrt{2^6} + 3 - \sqrt[3]{5^6} + 2 = \\
 & = 2^3 + 3 - 5^2 + 2 = -12
 \end{aligned}$$

$$\begin{aligned}
 & (2^2)^{3/2} + (3^2)^{1/2} - (5^3)^{2/3} + (2^3)^{1/3} = \\
 & = 2^3 + 3 - 5^2 + 2 = -12
 \end{aligned}$$

$$8) \quad \sqrt[3]{\sqrt{\frac{9a^2}{a^2}}} = \sqrt[6]{9} = \sqrt[6]{3^2} = \sqrt[3]{3}$$

$$\left[\frac{1}{a} \cdot (a^2)^{1/2} \right]^{1/3} = \left(\frac{3}{a} \cdot a \right)^{1/3} = 3^{1/3}$$

$$9) \quad (2\sqrt{3} + \sqrt{3})^2 = (3\sqrt{3})^2 = 27$$

$$\begin{aligned}
 & (12^{1/2} + 3^{1/2})^2 = \\
 & = [3^{1/2} \cdot (2^2)^{1/2} + 3^{1/2}]^2 = \\
 & (2 \cdot 3^{1/2} + 3^{1/2})^2 = (3 \cdot 3^{1/2})^2 = 9 \cdot 3 = 27
 \end{aligned}$$

$$\begin{aligned}
 10) \quad & \sqrt[4]{16^{-3}} \cdot 4 : 2^{-2} = \\
 & = \sqrt[4]{2^{-12}} \cdot 2^2 : 2^{-2} = \\
 & = 2^{-3} \cdot 2^2 : 2^{-2} = 2
 \end{aligned}$$

$$\begin{aligned}
 & (2^4)^{-3/4} \cdot 4 : 2^{-2} = \\
 & = 2^{-3} \cdot 2^2 : 2^{-2} = \\
 & = 2
 \end{aligned}$$