

ESERCIZI DI RIPASSO SUI RADICALI IN \mathbf{R}_0^+

1. $\sqrt{500} - \frac{2}{5}\sqrt{125} + \frac{3}{4}\sqrt{80} - \frac{1}{3}\sqrt{45}$ [$10\sqrt{5}$]
2. $\frac{5}{2}\sqrt{68} - \frac{11}{5}\sqrt{425} + \frac{2}{3}\sqrt{153} - \sqrt{17}$ [$-5\sqrt{17}$]
3. $2\sqrt{\frac{9}{5}} - 3\sqrt{\frac{16}{5}} + \sqrt{5} - \sqrt{\frac{169}{5}}$ [$-14\sqrt{\frac{1}{5}}$]
4. $\sqrt[3]{\frac{250}{3}} - 4\sqrt[3]{\frac{16}{81}} - \frac{1}{6}\sqrt[3]{\frac{16}{3}} - \sqrt[3]{\frac{16}{3}}$ [0]
5. $2\sqrt{6} + 5\sqrt{18} + 3\sqrt{24} - 9\sqrt{2} + \sqrt{7} - \sqrt{28}$ [$6\sqrt{2} + 2\sqrt{6} + 6\sqrt{3} - \sqrt{7}$]
6. $\frac{\sqrt[3]{4\sqrt{a}} \cdot \sqrt[6]{a^5}}{\sqrt{\sqrt[3]{a}}}$: $\sqrt{\sqrt{a^3}}$ [1]
7. $\sqrt[3]{\frac{(2x+1)^5}{x}} : \sqrt[5]{\frac{4x^2+4x+1}{x^6}}$ [$\sqrt[15]{x^{13}(2x+1)^{19}}$]
8. $\sqrt[6]{\frac{ax^2(2a-3)}{2a+3}} : \sqrt[8]{\frac{a^2x^3(4a^2-9)}{(2a+3)^2}}$ [$\sqrt[24]{\frac{2a-3}{a^2x(2a+3)}}$]
9. $\sqrt{\frac{x+y}{x} - \frac{x-y}{y}} - 2 : \sqrt[3]{\frac{1}{x^2} - \frac{1}{y^2}}$ [$\sqrt[6]{xy(y^2-x)}$]
10. $\sqrt[4]{\frac{2a^2+2b^2}{3ab}} : \sqrt{\frac{(a+b)^2-2ab}{3a^2b}}$ [$\sqrt[6]{\frac{6a^3b}{a^2+b^2}}$]
11. $\sqrt[6]{\frac{1}{2} + \frac{3}{4}} \cdot \sqrt[6]{2 + \frac{4}{5}} \cdot \sqrt[6]{\left(1 - \frac{1}{4}\right) \frac{8}{21}} \cdot \sqrt[6]{\frac{1}{4} - \frac{1}{8}}$ [$\sqrt{\frac{1}{2}}$]
12. $\sqrt[3]{\frac{ab^2}{a+b}} \cdot \sqrt{\frac{a+b}{b}} \cdot \sqrt[6]{\frac{a+b}{a^2b}}$ [$\sqrt[3]{a+b}$]
13. $\sqrt{\frac{x^2-y^2}{x^2}} \cdot \sqrt[3]{\frac{x^3}{x^2+y^2+2xy}}$ [$\sqrt[6]{\frac{(x-y)^3}{x+y}}$]
14. $\left(\sqrt[3]{\frac{x+y}{x-y}} \cdot \sqrt[4]{\frac{x^2-xy}{bx+by}} : \sqrt[6]{\frac{x}{b}}\right)^4 \cdot \sqrt[3]{\frac{b(x-y)}{x(x+y)}}$ [1]

$$15. \left(\sqrt{\frac{1}{x^3} - \frac{1}{x^4}} \cdot \sqrt{\frac{x^3 - x^2 + x - 1}{4}} \right) : \sqrt{4 - \frac{8x}{x^2 + 1}} \cdot \sqrt{\frac{4x^2}{x^2 + 1}} \quad \left[\sqrt{\frac{x^2 + 1}{4x^2}} \right]$$

$$16. \sqrt{\frac{x^2 + y^2 + 2xy}{xy}} \cdot \sqrt[4]{\frac{x^2 y - xy^2}{x + y}} \cdot \sqrt[8]{\frac{x^2 y^2}{(x + y)^6}} \quad \left[\sqrt[4]{x - y} \right]$$

$$17. \sqrt[3]{\frac{x^2 - xy}{xy + y^2}} \sqrt{\frac{x + y}{x - y}} \sqrt[6]{\frac{x^3 + 2x^2 y + xy^2}{x^2 y - 2xy^2 + y^3}} \sqrt{\frac{y}{x}} \quad \left[\sqrt{\frac{x + y}{x - y}} \right]$$

$$18. \frac{a \sqrt[4]{b - 1}}{\sqrt{a} \sqrt{a} \sqrt{b - 1}} - \frac{\sqrt{\sqrt{a}} \sqrt[6]{a^5} \sqrt[3]{\sqrt[4]{a^2}}}{\sqrt{a} \sqrt[3]{a^2}} \quad [0]$$

$$19. \sqrt[4]{\frac{a^2 \sqrt[3]{a^2}}{b^3 \sqrt[5]{b}}} \cdot \sqrt[5]{\frac{b^3 \sqrt[4]{b^3}}{a^2 \sqrt[3]{a^4}}} : \sqrt[20]{\frac{1}{b}} : \sqrt{b} \quad [1]$$

$$20. \sqrt[8]{\sqrt[15]{a^{97}}} : \sqrt[9]{\sqrt[16]{a^{111}}} \quad \left[\sqrt[80]{a^3} \right]$$

$$21. \sqrt[3]{25 a^2 b^4} \sqrt{\frac{3c}{5ab^2}} : \sqrt[3]{\frac{1}{9c^2}} \sqrt{\frac{3c}{5ab^2}} \quad \left[b \sqrt[3]{225 a^2 bc^2} \right]$$