

c) PRODOTTI, QUOZIENTI DI RADICALI - SVOLGIMENTI

$$80) \sqrt{6} \cdot \sqrt{3} \cdot \sqrt{2} = \sqrt{6 \cdot 3 \cdot 2} = \sqrt{36} = \boxed{6}$$

$$81) \sqrt[3]{5} \cdot \sqrt{2} = \sqrt[6]{5^2} \cdot \sqrt[6]{2^3} = \sqrt[6]{5^2 \cdot 2^3} = \sqrt[6]{25 \cdot 8} = \boxed{\sqrt[6]{200}}$$

$$82) \frac{\sqrt{x} \cdot \sqrt[6]{x}}{\sqrt[3]{x^2}} = \frac{\sqrt[6]{x^3} \cdot \sqrt[6]{x}}{\sqrt[6]{x^4}} = \sqrt[6]{\frac{x^3 \cdot x}{x^4}} = \sqrt[6]{1} = \boxed{1}$$

$$83) \sqrt{2} \cdot \sqrt[4]{\frac{1}{2}} \cdot \sqrt[8]{2} = \sqrt[8]{2^4} \cdot \sqrt[8]{\frac{1}{2^2}} \cdot \sqrt[8]{2} = \sqrt[8]{2^{4^2} \cdot \frac{1}{2^2} \cdot 2} = \sqrt[8]{2^3} = \boxed{\sqrt[8]{8}}$$

$$84) \sqrt[3]{\frac{a-1}{a}} \cdot \sqrt{\frac{a}{a-1}} = \sqrt[6]{\frac{(a-1)^2}{a^2}} \cdot \sqrt[6]{\frac{a^3}{(a-1)^3}} = \sqrt[6]{\frac{(a-1)^2}{a^2} \cdot \frac{a^3}{(a-1)^3}} = \sqrt[6]{\frac{a}{a-1}} = \boxed{\sqrt[6]{\frac{a}{a-1}}}$$

$$85) \frac{\sqrt{2} \cdot \sqrt[4]{3}}{\sqrt[8]{24}} = \frac{\sqrt[8]{2^4} \cdot \sqrt[8]{3^2}}{\sqrt[8]{24}} = \frac{\sqrt[8]{16} \cdot \sqrt[8]{9}}{\sqrt[8]{24}} = \sqrt[8]{\frac{16^2 \cdot 9^3}{24^3}} = \boxed{\sqrt[8]{6}}$$

$$86) \frac{\sqrt[4]{a^2 b^2}}{a\sqrt{a} \cdot b\sqrt{b}} \cdot \sqrt{a^2 b^2} = \frac{\sqrt[4]{ab}}{\cancel{ab} \sqrt[4]{ab}} \cdot \cancel{ab} = \boxed{1}$$

$$87) \frac{\sqrt{2a+2b}}{\sqrt{3a-3b}} \cdot \sqrt[4]{\frac{4a+4b}{9a-9b}} = \frac{\sqrt{2(a+b)}}{\sqrt{3(a-b)}} \cdot \sqrt[4]{\frac{4(a+b)}{9(a-b)}} =$$

$$= \sqrt[4]{\frac{4(a+b)^2}{9(a-b)^2}} \cdot \sqrt[4]{\frac{4(a+b)}{9(a-b)}} = \sqrt[4]{\frac{4^2(a+b)^2}{9(a-b)^2} \cdot \frac{4(a+b)}{9(a-b)}} = \sqrt[4]{\frac{4^3(a+b)^3}{9^3(a-b)^3}} = \boxed{\sqrt[4]{\frac{a+b}{a-b}}}$$

$$88) \sqrt{\frac{3}{2}} \cdot \sqrt[3]{\frac{9}{4}} = \sqrt{\frac{3}{2}} \cdot \sqrt[3]{\frac{3^2}{2^2}} = \sqrt[6]{\frac{3^3}{2^3}} \cdot \sqrt[6]{\frac{3^4}{2^4}} = \sqrt[6]{\frac{3^7}{2^7}} = \sqrt[6]{\frac{3 \cdot 2^4}{2^7}} = \boxed{\sqrt[6]{\frac{3}{2}}}$$

$$89) \sqrt[3]{\frac{1}{x} + \frac{1}{y}} \cdot \sqrt[5]{x^2 y^2} \cdot \sqrt{x+y} = \sqrt[3]{\frac{y+x}{xy}} \cdot \sqrt[5]{x^2 y^2} \cdot \sqrt{x+y} =$$

$$= \sqrt[30]{\frac{(x+y)^{10}}{x^{10} y^{10}}} \cdot \sqrt[30]{x^{12} y^{12}} \cdot \sqrt[30]{(x+y)^{15}} = \sqrt[30]{\frac{(x+y)^{10}}{\cancel{x^{10}} \cancel{y^{10}}} \cdot x^{12^2} y^{12^2} \cdot \frac{1}{(x+y)^{15^5}}} = \boxed{\sqrt[30]{\frac{x^2 y^2}{(x+y)^5}}}$$