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

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

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

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

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

87)

$\sqrt{\dfrac{2a+2b}{3a-3b}} : \sqrt[4]{\dfrac{4a+4b}{9a-9b}} = \sqrt{\dfrac{2(a+b)}{3(a-b)}} : \sqrt[4]{\dfrac{4(a+b)}{9(a-b)}} =$

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

88) $\sqrt{\dfrac{3}{2}} : \sqrt[3]{\dfrac{9}{4}} = \sqrt{\dfrac{3}{2}} : \sqrt[3]{\dfrac{3^2}{2^2}} = \sqrt[6]{\dfrac{3^3}{2^3}} : \sqrt[6]{\dfrac{3^4}{2^4}} = \sqrt[6]{\dfrac{3^{\cancel{3}}}{2^{\cancel{3}}} \cdot \dfrac{2^{\cancel{4}}}{3^{\cancel{4}}}} = \boxed{\sqrt[6]{\dfrac{2}{3}}}$

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

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