P. e Rad: Cou. Serie 4

1) $\sqrt[3]{2\sqrt[6]{2^{15}}} = \sqrt[3]{\sqrt[6]{2^6 \cdot 2^{15}}} = \sqrt[18]{2^{21}} = \begin{cases} \overset{(1)}{\sqrt[6]{2^7}} \overset{(2)}{=} 2\sqrt[6]{2} \\ \overset{(2)}{2\sqrt[18]{2^3}} \overset{(1)}{=} 2\sqrt[6]{2} \end{cases}$

$\overset{(1)}{\sqrt[3]{2\sqrt{2^5}}} = \sqrt[3]{2.2^2\sqrt{2}} = \sqrt[3]{2^3\sqrt{2}} = 2\sqrt[3]{\sqrt{2}} = 2\sqrt[6]{2}$

2) $1^2 + 2.1.\sqrt[3]{2} + \left(\sqrt[3]{2}\right)^2 = 1 + 2\sqrt[3]{2} + \sqrt[3]{2^2}$

3) $\left(2\sqrt[3]{2} + 3\sqrt[3]{2}\right)^2 = \left(5\sqrt[3]{2}\right)^2 = 25\sqrt[3]{2^2}$

4) $\left(\sqrt{3}\right)^2 + 2\sqrt{3}\sqrt{2} + \left(\sqrt{2}\right)^2 = 3 + 2\sqrt{6} + 2 = 5 + 2\sqrt{6}$

5) $\frac{\sqrt{2.3^2}}{3} = \frac{3\sqrt{2}}{3} = \sqrt{2}$ // oppure: $\sqrt{\frac{18}{9}} = \sqrt{2}$

6) $\sqrt[3]{\sqrt{2^2 \cdot \frac{1}{2}\sqrt[3]{\frac{1}{4}}}} = \sqrt[6]{2\sqrt[3]{\frac{1}{4}}} = \sqrt[6]{\sqrt[3]{2^3 \cdot \frac{1}{4}}} = \sqrt[18]{2}$

7) $\frac{x-1}{x}\sqrt{\frac{2x^3}{x-1}} = \sqrt{\frac{(x-1)^2}{x^2} \cdot \frac{2x^3}{x-1}} = \sqrt{2x(x-1)}$

8) $\left(\sqrt[4]{2^4 \cdot 4^6}\right)^{-2} \cdot 2^6 = \left(\sqrt[4]{2^4 \cdot 2^{12}}\right)^{-2} \cdot 2^6 =$

$= \sqrt[4]{\left(2^{16}\right)^{-2}} \cdot 2^6 = \sqrt[4]{2^{-32}} \cdot 2^6 = 2^{-8} \cdot 2^6 = 2^{-2}$