(viii) We have to prove that $\frac{3^{-3}\times 6^2\times\sqrt{98}}{5^2\times\sqrt[3]{\frac{1}{25}}\times(15)^{\frac{-4}{3}}\times 3^{\frac{1}{3}}}=28\sqrt{2}$. So,

Let $x=\frac{3^{-3}\times 6^2\times\sqrt{98}}{5^2\times\sqrt[3]{\frac{1}{25}}\times(15)^{\frac{-4}{3}}\times 3^{\frac{1}{3}}}$

$$x=\frac{3^{-3}\times 6^2\times\sqrt{98}}{5^2\times\sqrt[3]{\frac{1}{25}}\times(15)^{\frac{-4}{3}}\times 3^{\frac{1}{3}}}$$

$$=\frac{3^{-3}\times 3^2\times 2^2\times\sqrt{7\times 7\times 2}}{5^2\times\sqrt[3]{\frac{1}{25}}\times(15)^{\frac{-4}{3}}\times 3^{\frac{1}{3}}}$$

$$=\frac{3^{-3+2}\times 2^2\times 7\sqrt{2}}{5^2\times\frac{1}{5^{2\times\frac{1}{3}}}\times 5^{\frac{-4}{3}}\times 3^{\frac{-4}{3}}\times 3^{\frac{1}{3}}}$$

$$x = \frac{3^{-1} \times 2^2 \times 7\sqrt{2}}{\frac{5^2}{1} \times \frac{1}{5^{\frac{2}{3}}} \times \frac{1}{5^{\frac{4}{3}}} \times \frac{1}{3^{\frac{4}{3}}} \times \frac{3^{\frac{1}{3}}}{1}}$$

$$= 3^{-1} \times 2^2 \times 7\sqrt{2} \times \frac{1}{5^2} \times 5^{\frac{2}{3}} \times 5^{\frac{4}{3}} \times 3^{\frac{4}{3}} \times \frac{1}{3^{\frac{1}{3}}}$$

$$= 3^{-1+\frac{4}{3}-\frac{1}{3}} \times 4 \times 7\sqrt{2} \times 5^{-2+\frac{2}{3}+\frac{4}{3}}$$

$$= 3^{\frac{-1\times3}{1\times3}+\frac{4}{3}-\frac{1}{3}} \times 28\sqrt{2} \times 5^{\frac{-2\times3}{1\times3}+\frac{2}{3}+\frac{4}{3}}$$

$$x = 3^{\frac{-3+4-1}{3}} \times 28\sqrt{2} \times 5^{\frac{-6+2+4}{3}}$$

$$= 3^0 \times 28\sqrt{2} \times 5^0$$

$$= 1 \times 28\sqrt{2} \times 1$$

$$= 28\sqrt{2}$$

Hence, $\frac{3^{-3} \times 6^2 \times \sqrt{98}}{5^2 \times 3\sqrt{\frac{1}{25}} \times (15)^{\frac{-4}{3}} \times 3^{\frac{1}{3}}} = 28\sqrt{2}$

(ix) We have to prove that $\frac{(0.6)0-(0.1)^{-1}}{\left(\frac{3}{8}\right)^{-1}\left(\frac{3}{2}\right)^3+\left(\frac{-1}{3}\right)^{-1}} = \frac{-3}{2}$. So,

Let $x = \frac{(0.6)0-(0.1)^{-1}}{\left(\frac{3}{8}\right)^{-1}\left(\frac{3}{2}\right)^3+\left(\frac{-1}{3}\right)^{-1}}$

$$x = \frac{1-\left(\frac{0.1\times10}{1\times10}\right)^{-1}}{\left(\frac{3^{-1}}{2^{3\times-1}}\right)\left(\frac{3^3}{2^3}\right)+\left(\frac{-1^{-1}}{3^{-1}}\right)}$$

$$= \frac{1-\frac{1}{10^{-1}}}{\left(\frac{3^{-1}}{2^{-3}}\right)\left(\frac{3^3}{2^3}\right)+\left(\frac{-1}{\frac{1}{3^1}}\right)}$$

$$= \frac{1-\frac{1}{1}}{\frac{3^{-1+3}}{2^{-3+3}}+\left(-1\times\frac{3}{1}\right)}$$

$$= \frac{1-1\times 10}{\frac{3^2}{2^0}+(-3)}$$

$$\Rightarrow x = \frac{1-10}{\frac{3^2}{1}-3} = \frac{-9}{9-3} = -\frac{3}{2}$$

Hence, $\dfrac{(0.6)0-(0.1)^{-1}}{\left(\frac{3}{8}\right)^{-1}\left(\frac{3}{2}\right)^{3}+\left(\frac{-1}{3}\right)^{-1}} = -\frac{3}{2}$

********** END **********