

1. Evaluate :

a) $(4/16)^{-3/2}$

b) $216^{-4/3}$

c) $(-6)^{-3}$

d) $32^{0.8}$

$$\begin{aligned}
 &= \left(\frac{16}{4}\right)^{3/2} \\
 &= \frac{(\sqrt{16})^3}{(\sqrt{4})^3} \quad \text{OR} \\
 &= \frac{4^3}{2^3} \\
 &= \frac{64}{8} \\
 &= 8
 \end{aligned}$$

$$\begin{aligned}
 &= \left(\frac{16}{4}\right)^{3/2} \\
 &= (4)^{3/2} \\
 &= (\sqrt{4})^3 \\
 &= 2^3 \\
 &= 8
 \end{aligned}$$

$$\begin{aligned}
 &= \frac{1}{216^{4/3}} \\
 &= \frac{1}{(\sqrt[3]{216})^4} \\
 &= \frac{1}{(6)^4} \\
 &= \frac{1}{1296}
 \end{aligned}$$

$$\begin{aligned}
 &= \frac{1}{(-6)^3} \\
 &= \frac{1}{-216}
 \end{aligned}$$

$$\begin{aligned}
 &= 32^{8/10} \\
 &= 32^{4/5} \\
 &= (\sqrt[5]{32})^4 \\
 &= (2)^4 \\
 &= 16
 \end{aligned}$$