Evaluate or simplify each expression. You should have no negative exponents in any answers.

1. $625^{\frac{1}{4}}$

   Answer

   $$(5^4)^{\frac{1}{4}} = 5$$

2. $64^{\frac{2}{3}}$

   Answer

   $$64^{\frac{2}{3}} = (2^6)^{\frac{2}{3}} = 2^4 = 16$$

3. $64^{-\frac{2}{3}}$

   Answer

   $$64^{-\frac{2}{3}} = \left((64)^{\frac{2}{3}}\right)^{-1} = (16)^{-1} = \frac{1}{16}$$

4. $49^{\frac{3}{2}}$

   Answer

   $$49^{\frac{3}{2}} = (7^2)^{\frac{3}{2}} = 7^3 = 343$$

5. $49^{-\frac{3}{2}}$

   Answer

   $$49^{-\frac{3}{2}} = \left(49^{\frac{3}{2}}\right)^{-1} = 343^{-1} = \frac{1}{343}$$

6. $0.001^{\frac{1}{3}}$

   Answer

   $$0.001^{\frac{1}{3}} = \left(10^{-3}\right)^{\frac{1}{3}} = 10^{-1} = \frac{1}{10}$$

7. $0.001^{-\frac{4}{3}}$

   Answer

   $$0.001^{-\frac{4}{3}} = \left(10^{-3}\right)^{-\frac{4}{3}} = 10^4 = 10000$$