

## Negative and Fractional Indices

Simplify the following without using a calculator. **Show all steps of your working.**

1.  $5^{-2}$

2.  $4^{-3}$

3.  $9^{\frac{1}{2}}$

4.  $8^{\frac{1}{3}}$

5.  $25^{\frac{3}{2}}$

6.  $27^{\frac{2}{3}}$

7.  $16^{-\frac{1}{2}}$

8.  $81^{-\frac{1}{4}}$

9.  $125^{-\frac{2}{3}}$

10.  $16^{-\frac{3}{4}}$

11.  $\left(\frac{8}{125}\right)^{-\frac{1}{3}}$

12.  $\left(\frac{16}{9}\right)^{-\frac{1}{2}}$

$$13. \left(\frac{3}{5}\right)^{-2}$$

$$18. \left(2\frac{7}{9}\right)^{-3/2}$$

$$14. \left(\frac{2}{3}\right)^{-3}$$

$$15. \left(\frac{9}{16}\right)^{-3/2}$$

$$16. \left(\frac{125}{8}\right)^{-2/3}$$

$$17. \left(\frac{16}{81}\right)^{-3/4}$$