

Negative and fractional indices (mixed skills)

Maths

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Negative and fractional indices (mixed skills)

1. Arrange the cards in ascending order.

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

$$(\sqrt[3]{125})^2$$

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

$$(\sqrt{64})^3$$

$$2^{-3}$$

2. Work out the following.

a) $\left(\frac{2}{3}\right)^{-2} \div \left(\frac{27}{8}\right)^{\frac{2}{3}}$

d) $\left(\frac{1}{2}\right)^3 \div \left(\frac{125}{8}\right)^{\frac{2}{3}}$

b) $\left(\frac{16}{9}\right)^{\frac{1}{2}} \times \left(\frac{1}{4}\right)^{\frac{3}{2}}$

e) $\left(\frac{16}{9}\right)^{\frac{3}{2}} \div \left(\frac{9}{4}\right)^{\frac{1}{2}}$

c) $\left(\frac{1}{27}\right)^{\frac{1}{3}} \div \left(\frac{25}{4}\right)^{\frac{1}{2}}$

f) $\left(\frac{64}{27}\right)^{\frac{1}{3}} \times \left(\frac{9}{36}\right)^{\frac{1}{2}}$



Answers



Negative and fractional indices (mixed skills)

1. Arrange the cards in ascending order.

| | |
|---------------------|---------------|
| 2^{-3} | $\frac{1}{8}$ |
| $\frac{1}{8^3}$ | 2 |
| $(\sqrt[3]{125})^2$ | 25 |
| $25^{\frac{3}{2}}$ | 125 |
| $(\sqrt{64})^3$ | 512 |

2. Work out the following.

a) $\left(\frac{2}{3}\right)^{-2} \div \left(\frac{27}{8}\right)^{\frac{2}{3}}$
 $\frac{1}{1}$

b) $\left(\frac{16}{9}\right)^{\frac{1}{2}} \times \left(\frac{1}{4}\right)^{\frac{3}{2}}$
 $\frac{4}{24} = \frac{1}{6}$

c) $\left(\frac{1}{27}\right)^{\frac{1}{3}} \div \left(\frac{25}{4}\right)^{\frac{1}{2}}$
 $\frac{2}{15}$

d) $\left(\frac{1}{2}\right)^3 \div \left(\frac{125}{8}\right)^{\frac{2}{3}}$
 $\frac{4}{200} = \frac{1}{50}$

e) $\left(\frac{16}{9}\right)^{\frac{3}{2}} \div \left(\frac{9}{4}\right)^{\frac{1}{2}}$
 $\frac{128}{81}$

f) $\left(\frac{64}{27}\right)^{\frac{1}{3}} \times \left(\frac{9}{36}\right)^{\frac{1}{2}}$
 $\frac{12}{18} = \frac{2}{3}$

