

Solutions

2.1 $16=2^4$, so $16^{(3/4)}=2^3=8$.

2.2 A negative index gives a reciprocal: $2^{(-3)}=1/8=0.125$.

2.3 Move the decimal point five places left: $7.2 \times 10^{(-5)}=0.000072$.

2.4 False. Index laws do not turn a sum into a single power: $2^3+2^4=24$, not 2^7 . Do not round a surd when an exact answer is requested.

2.5 A The power to which a base is raised.

3.1 Take the nonnegative real square-root convention: $x \geq 0$. $x=27^{(2/3)}=9$; $9^{(3/2)}=27$. A negative x has no real square root under this convention.