Exercise walk-through

1.2.3 Metric Units

AQA · GCSE · Mathematics

Foundation or Higher?

Skill	Foundation	Higher
integer indices, **standard form**	yes	yes
fractional indices, **surds**	—	yes
recurring decimals to fractions	—	yes
error intervals	yes	yes
bounds in calculations	—	yes

Terms with examples

Term	Example
prime factor	$60 = 2^2 \times 3 \times 5$
reciprocal	-4 and $-\frac{1}{4}$
surd	$\sqrt{12} = 2\sqrt{3}$
recurring decimal	$0.\dot{2}\dot{7} = \frac{3}{11}$
significant figure	$0.004786 \to 0.0048$

Check yourself

Question	Answer
HCF of 72 and 90?	18
$\frac{5}{6} - \frac{3}{4}$?	$\frac{1}{12}$
$27^{2/3}$?	9
3.6 kg to 1 d.p.: interval?	$3.55 \leq m < 3.65$
Original if 20% off gives 64?	80

Exercises 2.1–2.3

2.1 (Foundation) Convert $0.16\ \text{m}^2$ to cm^2.

2.2 (Foundation) Convert $0.002\ \text{m}^3$ to litres.

2.3 (Foundation) Convert $72\ \text{km/h}$ to m/s.

Exercises 2.1–2.3

2.1 (Foundation) Convert 0.16 m^2 to cm^2.

2.1 Multiply 0.16 by 100^2: 1600.

2.2 (Foundation) Convert 0.002 m^3 to litres.

2.2 $0.002 \times 1{,}000{,}000 = 2000$ cm^3; divide by 1000 for 2 litres.

2.3 (Foundation) Convert 72 km/h to m/s.

2.3 $72 \times 1000 / 3600 = 20$.

Exercise 3.1

3.1 Decide whether this claim is true. Justify with a concrete calculation or counterexample: To convert square metres to square centimetres, multiply by 100.

Exercise 3.1

3.1 Decide whether this claim is true. Justify with a concrete calculation or counterexample: To convert square metres to square centimetres, multiply by 100.

3.1 False. A 1 m by 1 m square has sides 100 cm, hence area 10000 cm^2. Square the length conversion factor.

Local review guidance: show the chosen method; give the checked result; explain the condition or failed shortcut. This is authored classroom guidance.