Exercise walk-through

1.1.1 Number

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) Find the HCF of 48 and 60.

2.2 (Foundation) Find the LCM of 8 and 12.

2.3 (Foundation) Work out $3/4 + 5/6$ as a decimal.

Exercises 2.1–2.3

2.1 (Foundation) Find the HCF of 48 and 60.

2.1 $48 = 2^4 \times 3$ and $60 = 2^2 \times 3 \times 5$. The shared smallest powers give HCF $= 2^2 \times 3 = 12$.

2.2 (Foundation) Find the LCM of 8 and 12.

2.2 $8 = 2^3$ and $12 = 2^2 \times 3$. The largest prime powers give LCM $= 2^3 \times 3 = 24$.

2.3 (Foundation) Work out $3/4 + 5/6$ as a decimal.

2.3 Use denominator 12: $3/4 + 5/6 = 9/12 + 10/12 = 19/12$.

Exercise 3.1

3.1 Decide whether this claim is true. Justify with a concrete calculation or counterexample: The HCF of two positive integers is always larger than either integer.

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3.1 False. HCF(12,18)=6, which is less than both. A positive common divisor cannot exceed either number it divides.

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