Exercise walk-through

1.1 Arithmetic, factors, multiples and primes (N1–N4)

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 Work out $-8 + 3 \times (-4)$. [2]

2.2 Write 60 as a product of primes. [2]

2.3 Find the HCF of 36 and 48. [2]

Exercises 2.1·2.3

2.1 Work out $-8 + 3 \times (-4)$. [2]

2.1 Multiplication first: $3 \times (-4) = -12$; $-8 + (-12) = -20$.

2.2 Write 60 as a product of primes. [2]

2.2 $60 = 2^2 \times 3 \times 5$.

2.3 Find the HCF of 36 and 48. [2]

2.3 $36 = 2^2 \times 3^2$, $48 = 2^4 \times 3 \rightarrow \text{HCF} = 2^2 \times 3 = 12$.

Exercises 3.1–3.3

3.1 Work out $3\frac{1}{2} - 1\frac{3}{4}$, giving your answer as a mixed number in its simplest form. [3]

3.2 Two lighthouses flash every 12 s and every 18 s. They flash together at noon. When next do they flash together? [3]

3.3 A temperature is -7 °C. It falls by 9 °C, then rises by 4 °C. Work out the final temperature. [2]

Exercises 3.1–3.3

3.1 Work out $3\frac{1}{2} - 1\frac{3}{4}$, giving your answer as a mixed number in its simplest form. [3]

3.1 $3\frac{1}{2} = 7/2 = 14/4$; $1\frac{3}{4} = 7/4$; $14/4 - 7/4 = 7/4$; $= 1\frac{3}{4}$.

3.2 Two lighthouses flash every 12 s and every 18 s. They flash together at noon. When next do they flash together? [3]

3.2 LCM of 12 and 18: $12 = 2^2 \times 3$, $18 = 2 \times 3^2 \to \text{LCM} = 2^2 \times 3^2 = 36$; next together 36 s after noon; 12:00:36.

3.3 A temperature is -7 °C. It falls by 9 °C, then rises by 4 °C. Work out the final temperature. [2]

3.3 $-7 - 9 = -16$; $-16 + 4 = -12$ °C.