

Exercise walk-through

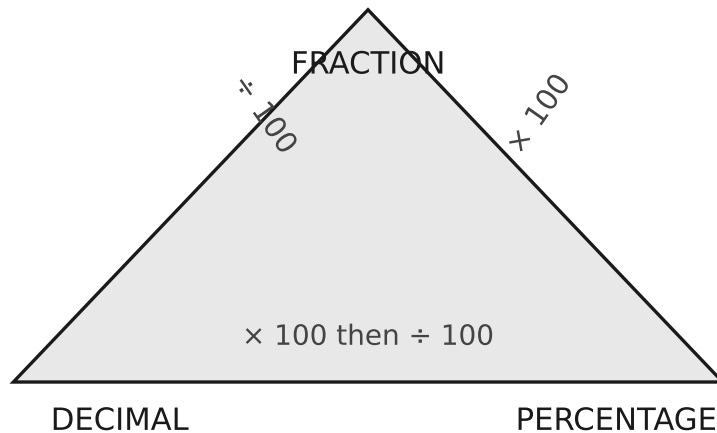
1.1.1

Number

AQA · GCSE · Mathematics

Figure 15: Fractions, decimals

$\frac{1}{2} = 0.5 = 50\%$ — every vertex names the same number



Check the labelled values and conditions.

29. Exact arithmetic and estimation · Higher

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$72=2^3 \times 3^2$ and $90=2 \times 3^2 \times 5$. Their HCF is $2 \times 9=18$. Make 18 bags with 4 pencils and 5 pens each. Their LCM is $2^3 \times 3^2 \times 5=360$. A prime integer is greater than 1 and has exactly two positive factors. The number 1 is not prime; a composite positive integer greater than 1 has more than two positive factors. Every integer greater than 1 has a unique product of prime factors apart from their order. For example, $60=2^2 \times 3 \times 5$. A factor divides a number; a multiple is the result of multiplying it by an integer. HCF uses common smallest powers, while LCM uses largest powers.

53. Signed numbers, place value and operation order · Foundation

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The balance is $-12+35-9=14$ yuan. Also $-4-(-7)=3$ and $(-6)\times(-3)=18$. The reciprocal of -4 is $-1/4$, since their product is 1. For $18\div3\times2$, work left to right to obtain 12. In 3.047, the 4 means four hundredths and the 7 means seven thousandths. For decimal multiplication, first calculate 24×35 : $24\times30+24\times5=720+120=840$. The original 2.4×0.35 has three decimal places in total, giving 0.840. For $5.04\div0.12$ multiply both numbers by 100 to get $504\div12$; $12\times40=480$ leaves 24, so the answer is 42. To order negative fractions, $-3/4=-0.75$ and $-4/5=-0.8$, hence $-4/5<-3/4$.

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 $\frac{3}{4} + \frac{5}{6}$ 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 $\text{HCF}=2^2 \times 3=12$.

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 $\text{LCM}=2^3 \times 3=24$.

2.3 (Foundation) Work out $\frac{3}{4} + \frac{5}{6}$ as a decimal.

2.3 Use denominator 12: $\frac{3}{4} + \frac{5}{6} = \frac{9}{12} + \frac{10}{12} = \frac{19}{12}$.

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. $\text{HCF}(12,18)=6$, 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.