

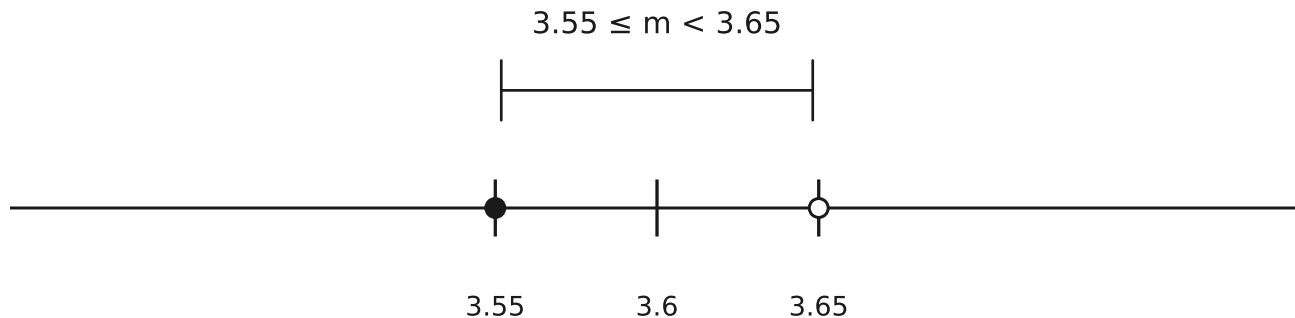
Exercise walk-through

1.2.3

Metric Units

AQA · GCSE · Mathematics

Figure 12: Indices, surds, standard form

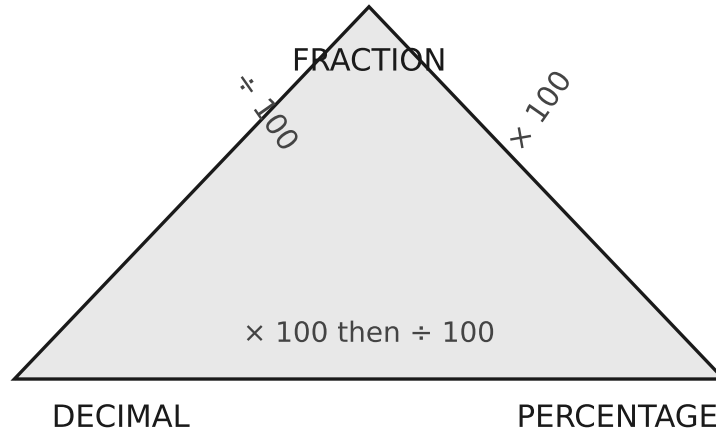


$m = 3.6$ to 1 decimal place: closed at the lower bound, open at the upper

Check the labelled values and conditions.

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.

Exercises 2.1·2.3

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

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

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

3 Exam-style questions

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

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

3 Exam-style questions

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.

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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.