

N58 Upper and Lower Bounds Accuracy

OCR

Edexcel

21 Jackson is trying to find the density, in g/cm^3 , of a block of wood.
The block of wood is in the shape of a cuboid.

He measures

NSB the length as 13.2 cm, correct to the nearest mm
R24 the width as 16.0 cm, correct to the nearest mm
 the height as 21.7 cm, correct to the nearest mm

He measures the mass as 1970 g, correct to the nearest 5 g.

By considering bounds, work out the density of the wood.
Give your answer to a suitable degree of accuracy.

You must show all your working and give a reason for your final answer.

(Total for Question 21 is 5 marks)

21 Jackson is trying to find the density, in g/cm^3 , of a block of wood.
The block of wood is in the shape of a cuboid.

He measures

- the length as 13.2 cm, correct to the nearest mm
- the width as 16.0 cm, correct to the nearest mm
- the height as 21.7 cm, correct to the nearest mm

NSB
R24

He measures the mass as 1970 g, correct to the nearest 5 g.

By considering bounds, work out the density of the wood.
Give your answer to a suitable degree of accuracy.

You must show all your working and give a reason for your final answer.

	U	L
length	13.25 cm	13.15 cm
width	16.05 cm	15.95 cm
height	21.75 cm	21.65 cm
mass	1972.5 g	1967.5 g



Biggest ans = $\frac{\text{heaviest}}{\text{smallest vol}} = \frac{1972.5}{4540.925125} = 0.43438285 \text{ g/cm}^3$

Smallest ans = $\frac{\text{lightest}}{\text{largest volume}} = \frac{1967.5}{4625.4093} = 0.42536$

2 gns	1sf	2sf	3sf
0.43438	0.4	0.43	0.434
0.42536	0.4	0.43	0.425

gns = 0.43 ✓

(Total for Question 21 is 5 marks)

18 A high speed train travels a distance of 487 km in 3 hours.

N58 The distance is measured correct to the nearest kilometre.
The time is measured correct to the nearest minute.

By considering bounds, work out the average speed, in km/minute, of the train to a suitable degree of accuracy.

You must show all your working and give a reason for your answer.

.....km/minute

(Total for Question 18 is 5 marks)

18 A high speed train travels a distance of 487 km in 3 hours.

N58

The distance is measured correct to the nearest kilometre.
The time is measured correct to the nearest minute.

$$\frac{D}{S \ T}$$

By considering bounds, work out the average speed, in km/minute, of the train to a suitable degree of accuracy.

You must show all your working and give a reason for your answer.

Distance

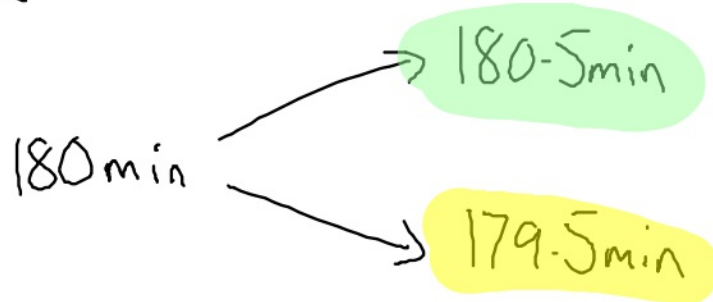


Greatest speed = $\frac{487.5}{179.5}$

= 2.7158

Slowest speed = $\frac{486.5}{180.5}$

Time



1sf = 3 ~~3sf = 2.72~~

3 ~~2.70~~

2sf .. 2.7

2.7

..... 2.7 km/minute

(Total for Question 18 is 5 marks)

AQA