

WJEC MATHEMATICS

HIGHER
3 TIER TOPICS

COMPOUND MEASURES

@MrGoreMaths.

Nov 2016 – Maths – P2

- (c) A car travels x miles in 30 minutes.
Its average speed in miles per hour is [1]

$$\frac{x}{2}$$

$$\frac{x}{30}$$

$$2x$$

$$\frac{2}{x}$$

$$30x$$

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Spec 1 – Numeracy – P1

- (d) Another gold bar has a mass of 3.86 kg and a volume of 200 cm³.



Calculate the density, in g/cm³, of the gold in the bar. [3]

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Spec 1 – Numeracy – P2

8. The following table gives areas and populations of 6 countries.

Country	Area (km ²)	Population in 2014
Wales	20 761	3 006 000
Singapore	716	5 399 200
Bermuda	53	64 237
India	3 287 240	1 244 392 079
Belgium	30 528	11 194 824
Tonga	720	104 270

(a) How many times as dense is the country with the greatest population density as the country with the least population density?

You must show all your working.

[4]

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- (b) Which two countries have the same population densities to the nearest whole number of people per km²? [1]
Circle your answer.

India
and
Belgium

Wales
and
Tonga

Singapore
and
Tonga

Wales
and
Belgium

Bermuda
and
Tonga

- (c) If the information in the table had all been given correct to 2 significant figures would this make a difference to your answer in part (a)? [2]

Circle either TRUE or FALSE for each of the following statements.

No difference at all, the answer would be exactly the same.	TRUE	FALSE
One of the countries used in the comparison would be different.	TRUE	FALSE
Both countries used in the comparison would be different.	TRUE	FALSE
The only difference would be in rounding the final answer, nothing else in the calculation changes.	TRUE	FALSE
You cannot tell whether there would be a difference in the answer in part (a) if the information in the table had all been given correct to 2 significant figures.	TRUE	FALSE

Spec 2 – Numeracy – P2

9. An engineer needs to check the density of steel produced by the factory where he works.

He collects a sample of 1000 ball bearings, each with a radius of 0.8 cm.

The total mass of the ball bearings is 16.935 kg.

Calculate the density of the steel.

Give your answer in kg / m³.

[5]

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Nov 2016 – Numeracy – P2

4. Gwenda enjoys road running.

(a) *In this part of the question, you will be assessed on the quality of your organisation, communication and accuracy in writing.*

She keeps a record of her run each day this week.

Day	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Distance	4.6 km	5.4 km	2.2 km	6.2 km	7.2 km	2.2 km	3.4 km
Time	26 mins	31 mins	12 mins	35 mins	40 mins	14 mins	22 mins

Last week, her average speed for the week was 9.6 kilometres per hour.
Calculate Gwenda's percentage improvement in her average speed from last week to this week.
You must show all your working. [6 + 2 OCW]

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Percentage improvement is %