Compound Measures (H & F)

A collection of 9-1 Maths GCSE Sample and Specimen questions from AQA, OCR, Pearson-Edexcel and WJEC Eduqas.

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Total Marks:	Worked Solutions

Gary: Speed 80km/h, Time 3hours, Distance 240 km, 3×80

1. Gary drove from London to Sheffield.

   It took him 3 hours at an average speed of 80km/h.

   Lyn drove from London to Sheffield.

   She took 5 hours.

   Assuming that Lyn drove along the same roads as Gary and did not take a break,

   (a) work out Lyn's average speed from London to Sheffield.

assuming Lyn drove 240km

$\text{Speed} = \frac{240}{5} = 48$

48 .....km/h [3]

(b) If Lyn did not drive along the same roads as Gary, explain how this could affect your answer to part (a).

if the distance was longer her speed would be slower and if the distance was shorter her speed would be quicker [1]

2. 180 g of copper is mixed with 105 g of zinc to make an alloy.

   The density of copper is 9 g/cm^3.

   The density of zinc is 7 g/cm^3.

	Copper	Zinc
mass	180g	105g
density	9g/cm^3	7g/cm^3
volume	20 cm^3	

a) Work out the volume of copper used in the alloy.

$\text{Volume} = \frac{180}{9} = 20\text{cm}^3$

a) .....20..... cm^3 [2]

b) What is the density of the alloy?

Volume of Zinc : $\frac{105}{7} = 15\text{cm}^3$

Total V = 20 + 15 = 35cm^3

Total Mass = 180 + 105 = 285

$D = \frac{285}{35} = 8.1428\ldots$

b) .....8.14..... g/cm^3 [4]

3. A box exerts a force of 140 newtons on a table.

   The pressure on the table is 35 newtons/m^2.

   Calculate the area of the box that is in contact with the table.

$$p = \frac{F}{A}$$

p = pressure
F = force
A = area

$F = 140$ Newtons
$p = 35$ newtons/m^2

$$35 = \frac{140}{A}$$

$$A = \frac{140}{35} = 4\text{ m}^2$$

[3]

CREDITS AND NOTES

Question	Awarding Body
1	Pearson Edexcel
2	OCR
3	Pearson Edexcel
4	
5	

Notes:

These questions have been retyped from the original sample/specimen assessment materials and whilst every effort has been made to ensure there are no errors, any that do appear are mine and not the exam board s (similarly any errors I have corrected from the originals are also my corrections and not theirs!).

Please also note that the layout in terms of fonts, answer lines and space given to each question does not reflect the actual papers to save space.

These questions have been collated by me as the basis for a GCSE working party set up by the GLOW maths hub - if you want to get involved please get in touch. The objective is to provide support to fellow teachers and to give you a flavour of how different topics "could" be examined. They should not be used to form a decision as to which board to use. There is no guarantee that a topic will or won't appear in the "live" papers from a specific exam board or that examination of a topic will be as shown in these questions.

Links:

AQA http://www.aqa.org.uk/subjects/mathematics/gcse/mathematics-8300

OCR http://ocr.org.uk/gcsemaths

Pearson Edexcel http://qualifications.pearson.com/en/qualifications/edexcel-gcses/mathematics-2015.html

WJEC Eduqas http://www.eduqas.co.uk/qualifications/mathematics/gcse/

Contents:

This version contains questions from:

AQA – Sample Assessment Material, Practice set 1 and Practice set 2

OCR – Sample Assessment Material and Practice set 1

Pearson Edexcel – Sample Assessment Material, Specimen set 1 and Specimen set 2

WJEC Eduqas – Sample Assessment Material