COMPOUND MEASURES

Pearson Edexcel - Monday 8 June 2020 - Paper 3 (Calculator) Foundation Tier

1.

24 Andy cycles a distance of 30 km at an average speed of 24 km/h.
He then runs a distance of 12 km at an average speed of 8 km/h.

Work out the total time Andy takes.
Give your answer in hours and minutes.

..... hours ..... minutes

(Total for Question 24 is 3 marks)

Pearson Edexcel - Monday 12 November 2018 - Paper 3 (Calculator) Foundation Tier

2.

24 Lara is a skier.

She completed a ski race in 1 minute 54 seconds.
The race was 475 m in length.

Lara assumes that her average speed is the same for each race.

(a) Using this assumption, work out how long Lara should take to complete a 700 m race.
Give your answer in minutes and seconds.

..... minutes ..... seconds

(3)

Lara's average speed actually increases the further she goes.

(b) How does this affect your answer to part (a)?

.....

.....

(1)

(Total for Question 24 is 4 marks)

Pearson Edexcel - Thursday 24 May 2018 - Paper 1 (Non-Calculator) Foundation Tier

3.

22 A cycle race across America is 3069.25 miles in length.

Juan knows his average speed for his previous races is 15.12 miles per hour.
For the next race across America he will cycle for 8 hours per day.

(a) Estimate how many days Juan will take to complete the race.

.....

(3)

Juan trains for the race.
The average speed he can cycle at increases.
It is now 16.27 miles per hour.

(b) How does this affect your answer to part (a)?

.....

.....

(1)

(Total for Question 22 is 4 marks)

Pearson Edexcel - Thursday 7 June 2018 - Paper 2 (Calculator) Foundation Tier

4.

9 Emily drives 186 miles in 3 hours.

(a) What is her average speed?

..... mph

(2)

Sarah drives at an average speed of 58 mph for 4 hours.

(b) How many miles does Sarah drive?

..... miles

(2)

(Total for Question 9 is 4 marks)

Pearson Edexcel - Wednesday 8 November 2017 - Paper 3 (Calculator) Foundation Tier

5.

21 A gold bar has a mass of 12.5 kg.

The density of gold is 19.3 g/cm^3

Work out the volume of the gold bar.
Give your answer correct to 3 significant figures.

..... cm^3

(Total for Question 21 is 3 marks)

Pearson Edexcel – Specimen 2 - Paper 1 (Non-Calculator) Foundation Tier

6.

23 One sheet of A3 card has area $\frac{1}{8}$ m^2.

The card has a mass of 160 g per m^2.

Work out the total mass of 25 sheets of A3 card.

.....

(Total for Question 23 is 4 marks)

Pearson Edexcel – Specimen 2 - Paper 2 (Calculator) Foundation Tier

7.

16 A sprinter runs a distance of 200 metres in 25 seconds.

Work out the average speed of the sprinter.

..... m/s

(Total for Question 16 is 1 mark)

Pearson Edexcel – Specimen 1 - Paper 1 (Non-Calculator) Foundation Tier

8.

21 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

.....

(Total for Question 21 is 3 marks)

Pearson Edexcel – Specimen 1 - Paper 3 (Calculator) Foundation Tier

9.

28 The densities of two different liquids A and B are in the ratio 19 : 22

The mass of 1 cm^3 of liquid B is 1.1 g.

5 cm^3 of liquid A is mixed with 15 cm^3 of liquid B to make 20 cm^3 of liquid C.

Work out the density of liquid C.

..... g/cm^3

(Total for Question 28 is 4 marks)

Pearson Edexcel – Sample Paper 1 (Non-Calculator) Foundation Tier

10.

24 Gary drove from London to Sheffield.
It took him 3 hours at an average speed of 80 km/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.

Gary: $\text{speed} = \frac{\text{distance}}{\text{time}}$

$80 = \frac{\text{distance}}{3}$

distance = 240 km

Lyn $\text{speed} = \frac{\text{distance}}{\text{time}}$

$= \frac{240}{5}$

$= 48$ km/h

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).

The distance would change and therefore the speed would change.

(1)

(Total for Question 24 is 4 marks)

OCR – Tuesday 03 November 2020- Morning - Paper 1 (Calculator) Foundation Tier

11.

12 (a) A train is travelling with a velocity of 15 m/s.
It then accelerates at 0.5 m/s^2 for 6 seconds.

Use the formula $v = u + at$ to calculate the velocity of the train after the 6 seconds.

(a) ..... m/s **[2]**

(b) Rearrange the formula $v = u + at$ to make a the subject.

(b) ..... **[2]**

OCR November 09 November 2020- Morning (Calculator) Foundation Tier

12.

20 A truck is used to transport some wood panels.
Each wood panel is a cuboid measuring 2.4m by 1.2m by 1.8 **cm**.
The density of each wood panel is 750 kg/m^3.

The truck can carry 15 tonnes of these wood panels.

Calculate the maximum number of wood panels that the truck can carry.
Show how you decide.

..... **[6]**

OCR Tuesday 5 November 2019 – Morning (Calculator) Foundation Tier

13.

14 Dean drives a distance of 760 km in 9 hours.
Robert drives a distance of 559 km in 6 hours 30 minutes.

Who has the highest average speed?
Show how you decide.

..... because .....

..... **[4]**

14.

20 A truck is used to transport some wood panels.
Each wood panel is a cuboid measuring 2.4 m by 1.2 m by 1.8 **cm**.
The density of each wood panel is 750 kg/m^3.

The truck can carry 15 tonnes of these wood panels.

Calculate the maximum number of wood panels that the truck can carry.
Show how you decide.

..... **[6]**

OCR Thursday 07 November 2019- Morning (Non-Calculator) Foundation Tier

15.

10 A man running at a constant speed of 5 metres per second takes 66 seconds to complete a particular distance.
A horse completes the same distance running at a constant speed of 15 metres per second.

Find the difference, in seconds, in the times taken by the man and by the horse to run this distance.

..... seconds **[3]**

OCR Tuesday 21 May 2019 – Morning (Calculator) Foundation Tier

16.

15 Anna and Paddy take part in the same fun run.

Anna completed the fun run in 2 hours.
Her average speed was 6 kilometres per hour.
Paddy completed the fun run in 90 minutes.

(a) Work out Paddy's average speed in kilometres per hour.

(a) ..... km/h **[4]**

(b) Anna says

> Because I stopped for drinks, my average running speed was faster than 6 kilometres per hour.

Give one reason to support Anna's statement.

.....

..... **[1]**

17.

16 The volume of a piece of wood is 620 cm^3.
Its density is 0.85 g/cm^3.

Work out its mass.

..... g **[2]**

OCR Tuesday 11 June 2019 – Morning (Calculator) Foundation Tier

18.

28 (a) Simplify.

(i) $h^3 \times h^{-3}$

(a) (i) ..... [1]

(ii) $\frac{f^9}{f^3}$

(ii) ..... [1]

(b) The length of each side of a plastic cube is $2a$ millimetres.
The cube has mass $32a^2$ grams.

Find an expression for the density of the cube in its simplest form.
Give the units of your answer.

(b) density = ...

units ..... [5]

OCR Monday 12 November 2018 – Morning (Calculator) Foundation Tier

19.

20 A bee flies from its hive to a flower at a constant speed of 7.5 metres per second for 10 seconds.
The bee then takes 15 seconds to fly back to the hive.
Assume the bee always flies in a straight line.

(a) Ignoring the time spent at the flower, work out the **overall** average speed of the bee in its flight from the hive to the flower and back.

(a) ..... metres per second **[4]**

(b) If the bee is not assumed to fly in a straight line, how might your answer be affected?

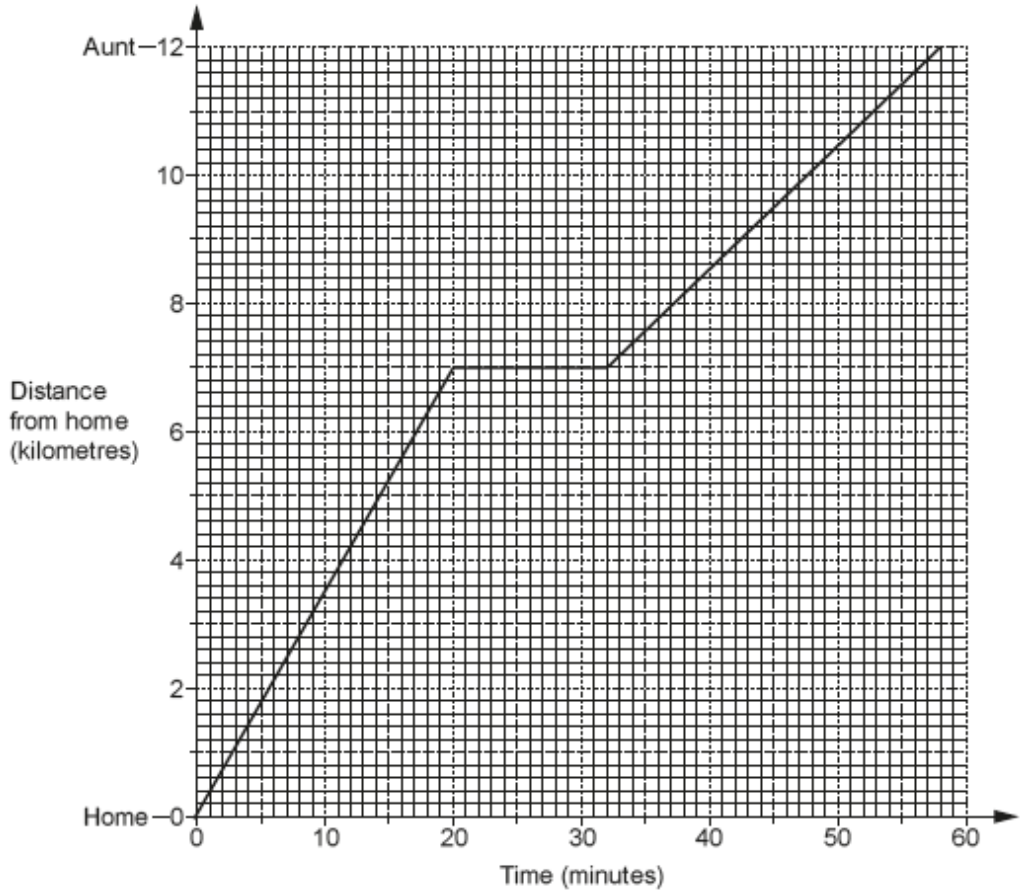
.....

..... **[1]**

OCR Thursday 7 June 2018 – Morning (Non Calculator) Foundation Tier

20.

17 Viraj cycled from his home to visit his aunt.
He drew this graph to show his journey.
He stopped at a shop 7 km from his home.



(a) State one assumption that Viraj made when he drew his graph.

.....

..... **[1]**

(b) For how long did Viraj stop at the shop?

(b) ..... minutes **[1]**

(c) Work out Viraj's average speed between his home and the shop.
Give your answer in metres per minute.

(c) ..... metres per minute **[3]**

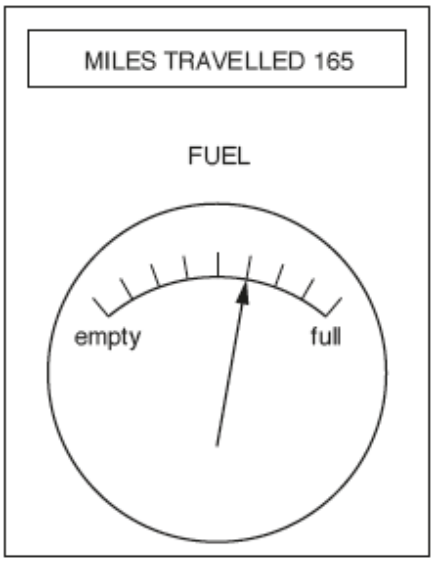
(d) How can you tell, without doing any calculations, that Viraj's average speed between his home and the shop is greater than his average speed between the shop and his aunt?

.....

..... **[1]**

21.

19 Ifsaw noticed this information on her car's dashboard at the end of her journey.
She started her journey with a full tank of fuel and her miles travelled set to zero.



(a) Work out how far Ifsaw's car can travel on a full tank of fuel.

(a) ..... miles **[3]**

(b) What assumption have you made when answering part **(a)**?

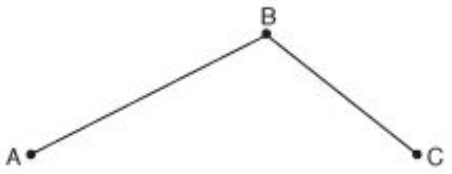
.....

..... **[1]**

OCR Monday 6 November 2017– Morning (Calculator) Foundation Tier

22.

14 Halina cycled from A to B at an average speed of 26 km per hour.
She then cycled from B to C at an average speed of 20 km per hour.



Not to scale

She left A at 10.00 am, did not stop at B and arrived at C at 3.00 pm.

(a) It took Halina x hours to cycle from A to B.

(i) Explain why the distance from A to B, in kilometres, is $26x$.

.....

..... **[1]**

(ii) Write down an expression, in terms of x, for the **time** taken to cycle from B to C.

(a)(ii) ..... hours **[2]**

(iii) Hence show that the **distance** from B to C, in kilometres, is $100 - 20x$.

..... **[1]**

(b) The **total distance** cycled by Halina from A to C is 118 km.

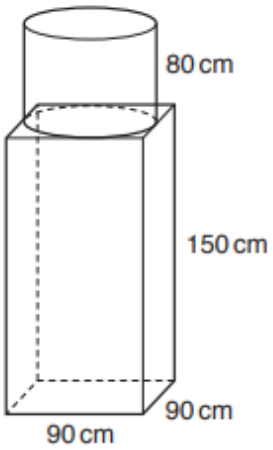
Find the distance from A to B.

(b) ..... km **[4]**

OCR Tuesday 13 June 2017 – Morning (Calculator) Foundation Tier

23.

22



A sculpture is formed from a cylinder resting on top of a cuboid.
The cylinder has radius 45 cm and height 80 cm.
The cuboid measures 90 cm by 90 cm by 150 cm.

The sculpture is made of granite.
The granite has a density of 2.7 g/cm^3.

Calculate the total mass of the sculpture in tonnes.

.....tonnes **[5]**