Name ANSWERS	Class

MATHS TEACHER HUB

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Converting units

(9 – 1) Topic booklet

Foundation

These questions have been collated from previous years GCSE Mathematics papers.

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.	Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must **show all your working out.**
- If the question is a **1F** question you are not allowed to use a calculator.
- If the question is a **2F** or a **3F** question, you may use a calculator to help you answer.

Information

- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Answer ALL questions
Write your answers in the space provided.
You must write down all the stages in your working.

1 Change 40 centimetres into millimetres.

400 millimetres

June 2022 – Paper 1F **(Total for Question 1 is 1 mark)**

1 Change 300 centimetres into metres.

3 metres

May 2020 – Paper 3F **(Total for Question 1 is 1 mark)**

1 (a) Change 365 cm into metres.

3·65 m

(1)

(b) Change 2.7 kg into grams.

2700 g

(1)

November 2017 – Paper 1F **(Total for Question 1 is 2 marks)**

1 Change 530 centimetres into metres.

5·3 metres

Specimen 1 – Paper 1F **(Total for Question 1 is 1 mark)**

1 Change 4500 g to kg.

4.5 kg

Specimen 2 – Paper 3F **(Total for Question 1 is 1 mark)**

2 Change 800 centimetres to metres.

8 metres

June 2024 – Paper 3F **(Total for Question 2 is 1 mark)**

2 Change 5000 millilitres to litres.

5 litres

May 2024 – Paper 2F **(Total for Question 2 is 1 mark)**

2 Change 3 metres into centimetres.

300 centimetres

November 2021 – Paper 2F **(Total for Question 2 is 1 mark)**

3 Change 9 metres into centimetres.

900 centimetres

June 2023 – Paper 2F **(Total for Question 3 is 1 mark)**

3 Change 1.5 kilometres to metres.

1500 metres

June 2019 – Paper 3F **(Total for Question 3 is 1 mark)**

3 Change 7 metres to centimetres.

700 centimetres

November 2023 – Paper 2F **(Total for Question 3 is 1 mark)**

3 (a) Change 4560 g into kg.

4·56 kg

(1)

(b) Change 7.3 m into mm.

7300 mm

(1)

November 2018 – Paper 2F **(Total for Question 3 is 2 marks)**

4 Change 4000 grams into kilograms.

4 kilograms

June 2023 – Paper 3F **(Total for Question 4 is 1 mark)**

4 Change 53 centimetres to millimetres.

530 millimetres

November 2022 – 2F **(Total for Question 4 is 1 mark)**

4 Change 1756 grams to kilograms.

1·756 kg

June 2019 – Paper 2F **(Total for Question 4 is 1 mark)**

5 Change 4 kilometres into metres.

4000 metres

November 2019 – Paper 3F **(Total for Question 5 is 1 mark)**

5 (a) Change 35 cm to mm.

350 mm

(1)

(b) Change 7700 millilitres to litres.

7.7 litres

(1)

(c) Change 0.32 kilograms to grams.

320 grams

(1)

May 2018 – Paper 2F **(Total for Question 5 is 3 marks)**

5 There are 1.5 litres of water in a bottle.

There are 250 millilitres of water in another bottle.

Work out the total amount of water in the two bottles.

1·5 litres = 1500ml

+ 250ml

= 1750ml

1750ml

Specimen 1 – Paper 3F **(Total for Question 5 is 3 marks)**

5 Thais has a large bottle of shampoo.
There are 2 litres of shampoo in the large bottle.

Thais also has some empty small bottles.
Each small bottle can be completely filled with 150 m*l* of shampoo.

How many small bottles can be completely filled with shampoo from the large bottle?

2 litres = 2000ml

$\frac{2000}{150} = 13.\dot{3}$

13

November 2017 – Paper 3F **(Total for Question 5 is 3 marks)**

6 Here are the instructions for making a drink.

Add 100 m*l* of juice to 2 litres of water

Dev uses 5 litres of water to make the drink.

How much drink has he made?

100ml juice + 2 litres of water

50ml juice + 1 litre of water

250ml juice + 5 litres of water

250ml + 5000ml

5250ml

Specimen 2 – Paper 1F **(Total for Question 6 is 3 marks)**

6 There are 3 litres of oil in a can.
Jermaine uses 700 millilitres of the oil.

Work out the amount of oil left in the can.
Give your answer in millilitres.

3 litres = 3000ml

$$\begin{array}{r} {}^{2}\not{3}{}^{1}000 \\ -\ 700 \\ \hline 2300\text{ml} \end{array}$$

2300 millilitres

November 2023 – Paper 1F

(Total for Question 6 is 3 marks)

7 Shaun is 1.88 m tall.

David is 6 cm taller than Shaun.

How tall is David?

1.88m → 188cm

$$\begin{array}{r} 188 \\ +\ 6 \\ \hline 194 \end{array}$$

194cm or 1.94m

November 2018 – Paper 3F

(Total for Question 7 is 2 marks)

9 Mandy buys a 12 kilogram bag of dog food.

Mandy's dog has 3 meals a day.
She gives her dog 105 grams of dog food for each of these meals.

How many complete weeks will the bag of dog food last?
You must show all your working.

$3 \times 105g = 315g$ per day

$12kg = 12000g$

$\frac{12000}{315} = 38.0952$

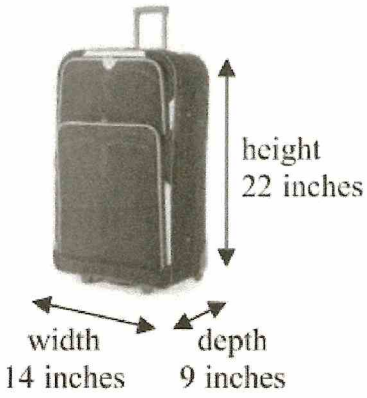
$= 38 days$

$35 days = 5 weeks$

5

(Total for Question 9 is 5 marks)

10 An American airline has a maximum size for bags on its planes.
The diagram shows the maximum dimensions.



Chris has a bag.

It has
height 50 cm
width 40 cm
depth 20 cm

1 inch = 2.54 cm

50 ÷ 2.5 = 20 inches ✓

40 ÷ 25 = 16 inches ✗

20 ÷ 2.5 = 8 inches ✓

Can Chris take this bag on the plane?
You must show your working.

Chris's bag is too wide.
He cannot take it on the plane.

(Total for Question 10 is 3 marks)

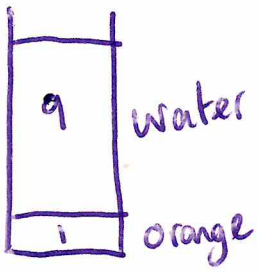
15 Jamil makes a drink by mixing

1 part of orange squash with 9 parts of water.

He uses 750 millilitres of orange squash.

Jamil is going to put the drink he has mixed into 1 litre bottles.

Work out the greatest number of 1 litre bottles that Jamil can completely fill.



6750ml

750ml

= 7500ml

= 7.5 litres

7

(Total for Question 15 is 3 marks)

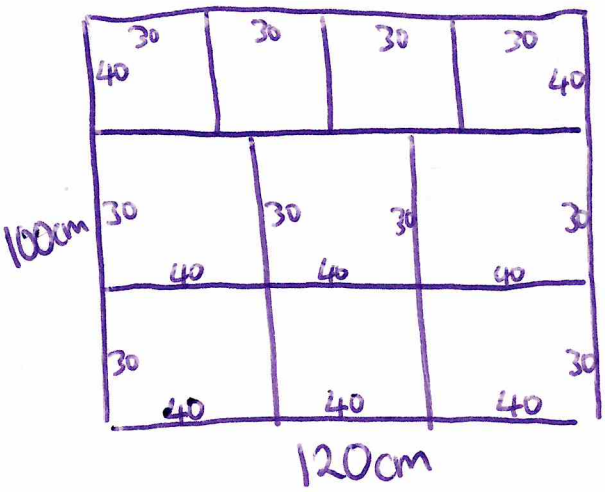
15 Carpet tiles are going to be used to cover a floor.

The floor is a 1200 mm by 1000 mm rectangle.
Each carpet tile is a 40 cm by 30 cm rectangle.

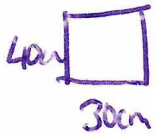
Exactly 10 carpet tiles can be used to cover the floor completely.

Show in a labelled sketch how this can be done.

Floor



Tiles



(Total for Question 15 is 3 marks)

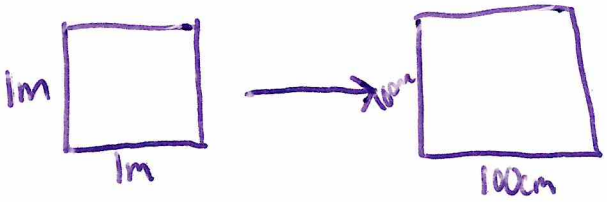
16 Change 72 km/h into m/s.

72km/h
7200m/h ÷60
1200m/min ÷60
20m/s

20 m/s

Sample 1 – Paper 3F **(Total for Question 16 is 3 marks)**

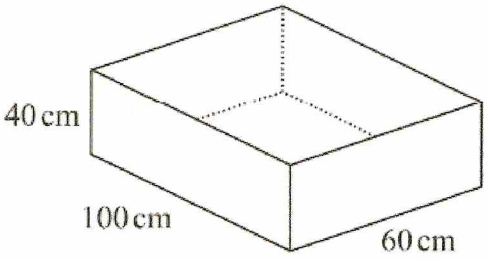
18 Change 1 m^2 into cm^2



10000 cm^2

November 2021 – Paper 3F **(Total for Question 18 is 1 mark)**

24 The diagram shows a sand pit.
The sand pit is in the shape of a cuboid.



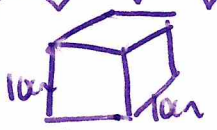
Sally wants to fill the sand pit with sand.
A bag of sand costs £2.50
There are 8 litres of sand in each bag.

Sally says,

"The sand will cost less than £70"

Show that Sally is wrong.

$40 \times 100 \times 60 = 240000 cm^3$

1 litre =  $= 1000 cm^3$

$\frac{240000}{1000} = 240$ litres

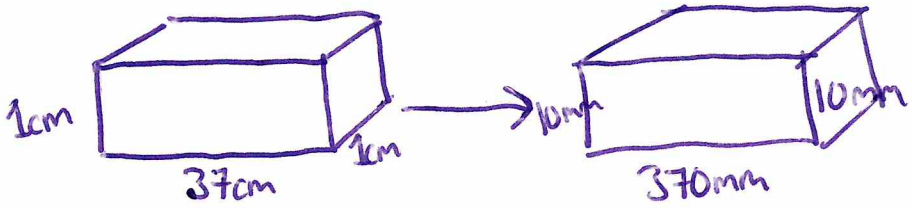
$\frac{240}{8} = 30$ bags of sand

$30 \times £2.50 = £75$

Sally is wrong, it is more than £70

(Total for Question 24 is 5 marks)

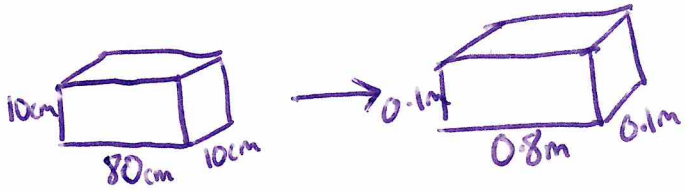
26 Write 37 cm³ in mm³



37000 mm³

November 2019 – Paper 3F **(Total for Question 26 is 1 mark)**

27 (a) Change 8000 cm³ to m³



0.008 m³

(1)

(b) Change a speed of 180 km per hour to metres per second.

180km/h
180000m/h ÷60
3000m/min ÷60
50m/second

50 metres per second

(3)

November 2022 – 3F **(Total for Question 27 is 4 marks)**

29 Change 30 metres per second to kilometres per hour.

30m/second ×60
1800m/min ×60
108000m/hour
108km/h

108 kilometres per hour

June 2022 – Paper 3F **(Total for Question 29 is 2 marks)**