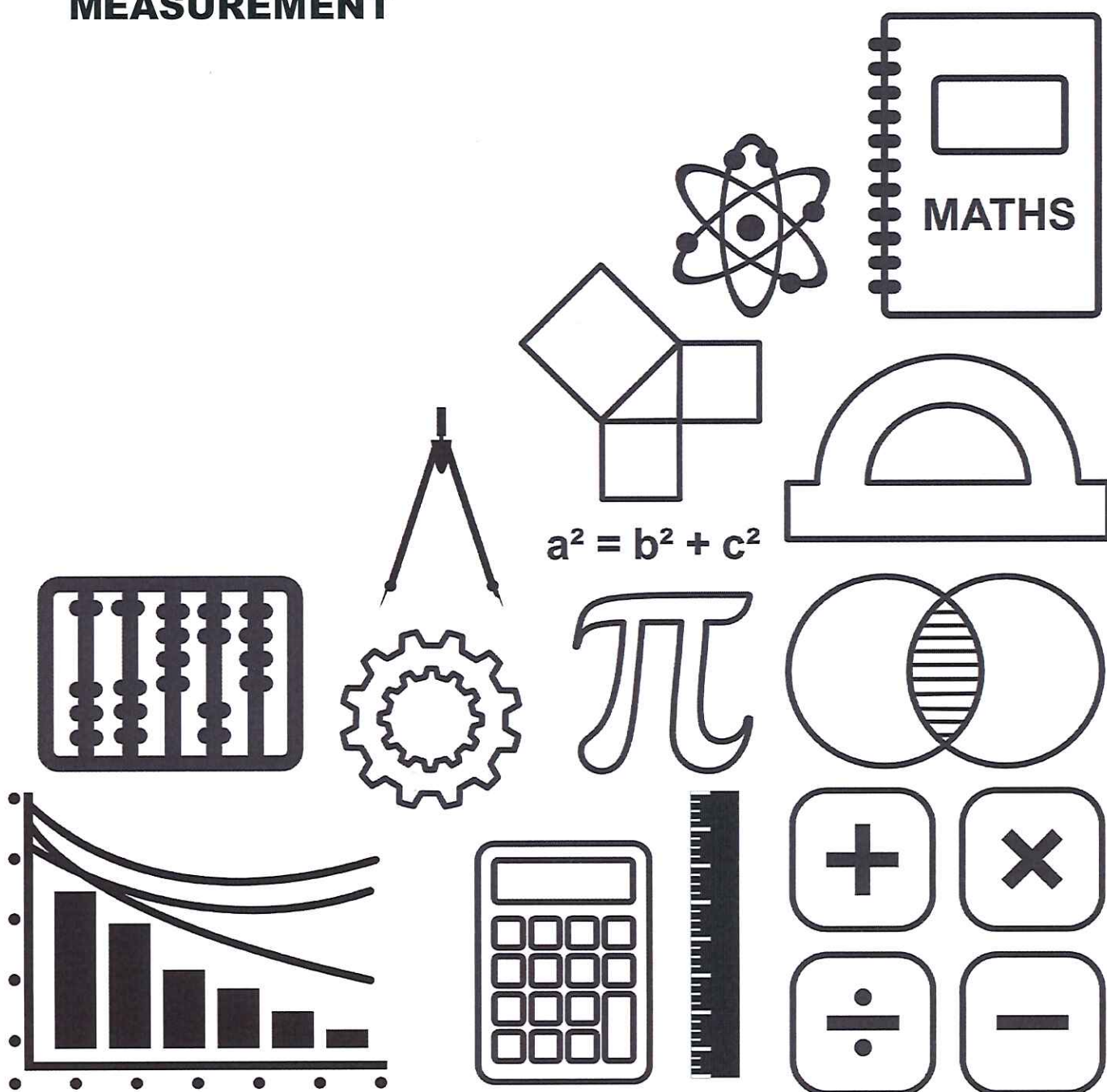


GCSE TOPIC BOOKLET MEASUREMENT

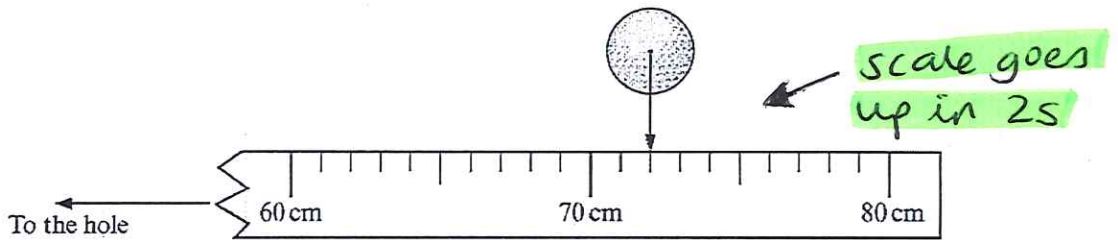


1.

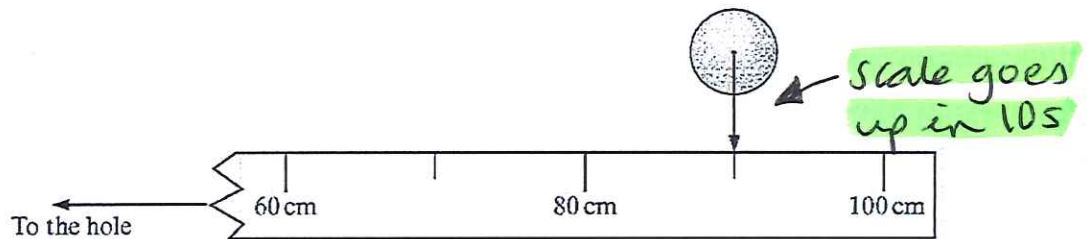
Laura and Colin have both hit their golf balls in a competition.

They use different measuring tapes to find how far **the centres** of their golf balls are from the hole.

Laura's measurement



Colin's measurement



(a) Write down how far each ball is from the hole.

Laura's ball 72 cm
Colin's ball 90 cm

[2]

(b) Whose ball is nearer the hole and by how many centimetres?

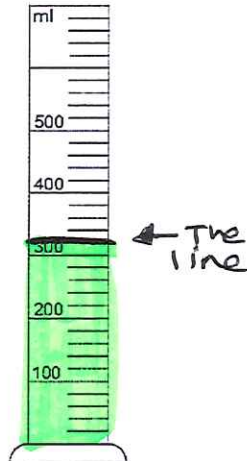
Laura's by 18 cm

[1]

2.

- (a) The diagram shows an empty measuring cylinder with markings in millilitres. Three hundred and twenty millilitres of water are poured into the cylinder. Draw a line on the cylinder to show the water level.

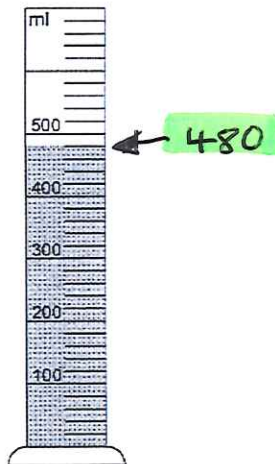
[1]



scales go up
in 20s

- (b) A very small jug is filled with water. The water is then poured into an empty measuring cylinder. This process is carried out a total of six times. The final water level is shown in the diagram. How much water does the jug hold?

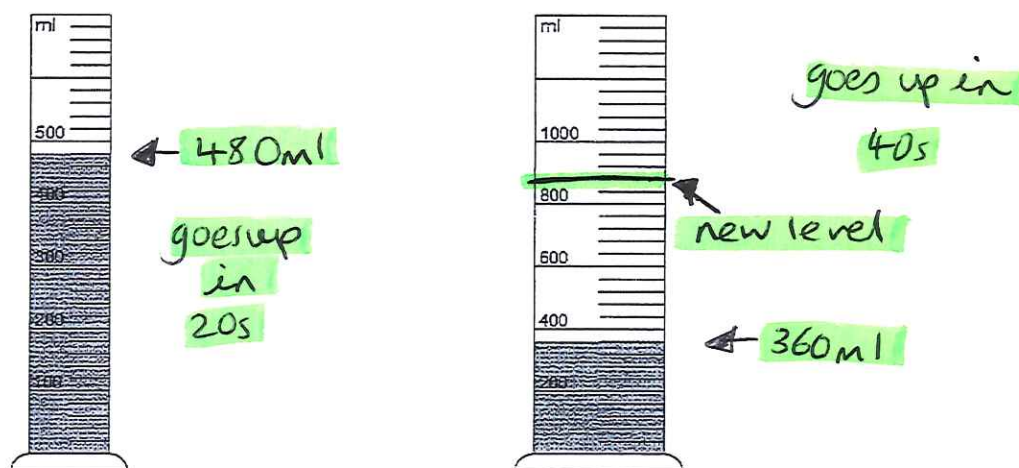
[3]



$$\begin{array}{r} 80 \\ 6 \overline{)480} \end{array}$$

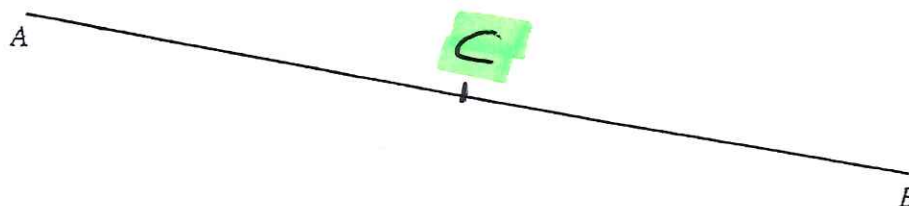
80ml

- (c) The water in the cylinder on the left is to be poured into the cylinder on the right, which already has some water in it.
Draw a line on the right-hand cylinder to show the new water level. [2]



$$\begin{array}{r} 360 \\ + 480 \\ \hline 840 \text{ ml} \end{array}$$

(d)



- (i) Measure and write down the length of the line AB.

AB = 11.8 cm

[1]

- (ii) Clearly mark the point C, where C is the mid-point of AB.

[1]

midpoint = $\frac{1}{2}$ of 11.8

$$\begin{array}{r} 5.9 \\ 2 \overline{) 11.8} \end{array}$$

3.

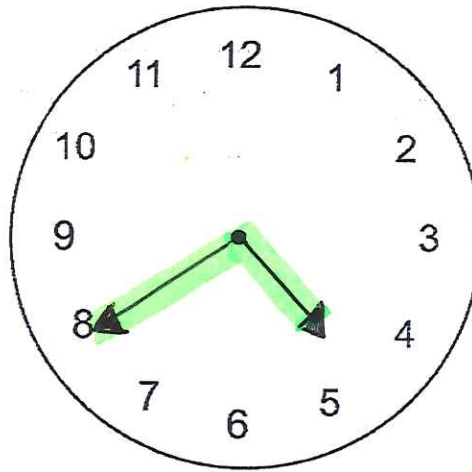
Amira watched three episodes of a TV series that she had recorded.

She started watching the first episode at 16:40.

- (a) Draw hands on the clock below to show the time 16:40.

[1]

4.40 pm



Episode 1 break Episode 2 break Episode 3

- (b) Amira watched three episodes, each 50 minutes long.

She took a break between each episode. The breaks were of equal length.

She finished watching the third episode at 19:40. = 7.40 pm

2 breaks altogether

How long was the break between each episode?

[3]

$$4.40 \text{ pm} \rightarrow 7.40 \text{ pm} = 3 \text{ hours}$$

$$= 3 \times 60$$

$$= 180 \text{ minutes}$$

$$\text{Total episode duration} = 50 + 50 + 50 = 150 \text{ minutes}$$

$$\text{Total breaks} = 180 - 150 = 30 \text{ minutes}$$

$$1 \text{ break} = \frac{30}{2} = 15 \text{ minutes}$$

15 minutes long

4.

Write down the metric unit that is best used to measure

the height of a door.

metres (or cm or mm)

the weight of a pocket calculator.

g (grams)

the distance from Rome to Venice.

km (kilometres)

the volume of water in a bath.

litres (L)

[4]

5.

Circle the quantity that is the appropriate estimate for each of the following.

[4]

Height of a man	170 km	170 m	170 mm	170 cm
Weight of a large dog	28 kg	28 g	28 mg	280 g
Capacity of a car's fuel tank	60 cm ³	600 ml	60 litres	6000 litres
Floor area of a room	18 m ²	18 cm ²	18 mm ²	18 cm ³

Circle the quantity that is an appropriate estimate for each of the following.

[4]

Weight of a dinner plate	650 kg	650 g	650 mg	65 g
Volume of water in a full bucket	5 litres	500 cm ³	50 ml	5 cl
Width of a door	80 km	80 m	80 mm	80 cm
Area of the floor of a bedroom	9 m ²	900 cm ²	90 mm ²	900 cm ³

7.

Circle the quantity that is an appropriate estimate for each of the following.

[4]

Weight of a large dog	3 g	3 mg	30 kg	3 kg
Capacity of a bucket	5 litres	50 cm ³	500 ml	50 litres
Area of a page of a book	3 m ²	300 cm ²	3 cm ²	3 cm ³
Height of an adult woman	1.7 m	17 m	1.7 mm	17 cm

8.

How many metres are there in 5.07 kilometres?

[2]

km $\times 1000 \rightarrow$ metres
 $5.07 \times 1000 = 5070 \text{ metres}$

9.

Write down the metric unit that is best used to measure

the weight of an egg,

the width of a football field.

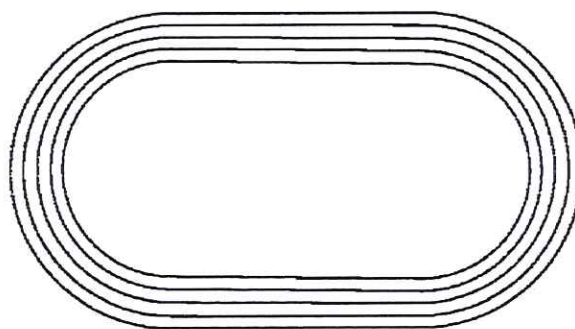
the distance from Rome to Venice,

the volume of a petrol tank.

g (grams)
m (metres)
km (kilometres)
L (litres)

[4]

10.



A single lap of an athletics track is 400 metres.
How many laps will a person run in a two kilometre race?

[2]

$$1000\text{m} = 1\text{km} \quad 2\text{km} = 2000\text{metres}$$

$$2000 \div 400 =$$

$$20 \div 4 = \underline{5 \text{ laps}}$$

11.

Every week, Sarah does her family shopping on the Internet. She has to be careful to order things in the correct quantities.

The following table shows the items and quantities that Sarah has ordered.

Place a 'X' by the items that do not appear to have a sensible quantity and a '✓' by those that do. Two have been completed for you.

Item	Quantity	X or ✓
Orange juice	2 litres	✓
Mushrooms	50 kilograms	X
A bag of sugar	1 kilogram	✓
Tomato sauce	350 litres	X
Potatoes	5 grams	X
Large chocolate bar	100 grams	✓
Bottle of vinegar	250 millilitres	✓
Butter	500 grams	✓
Milk	4 litres	✓
Washing-up liquid	500 litres	X

[4]

12.

Circle the quantity that is the appropriate estimate for each of the following.

Weight of a 16-year-old male	65 kg	650 mg	65 g	6.5 kg
Volume of a bucket of water	450 litres	45 ml	4.5 cm ³	4.5 litres
Distance from Cardiff to London	240 cm	24 km	240 mm	240 km
Height of a woman	170 m	1700 cm	170 cm	170 mm

[4]

13.

A television channel needs to fit the following four programmes between its three 'News' slots.

Programme	Time needed
<i>Your Songs</i>	30 minutes
<i>Nature Trails</i>	25 minutes
<i>Theatre Review</i>	20 minutes
<i>The Comedy Slot</i>	20 minutes

The title of each news bulletin tells you how long it lasts.

Complete the following timetable to show the order in which the four programmes can be broadcast.

[5]

TIME

PROGRAMME

11:00 a.m.

The 10 minute News Report.

11:10 a.m.

Nature Trails

11:35 a.m.

Theatre Review

11:55 a.m.

Your 15 minute News Update.

12:10 p.m.

Your Songs

12:40 p.m.

The Comedy Slot

1:00 p.m.

The 10 minute News Report.

One solution is shown.

There are others.

14.

Jenny wants to record six episodes of her favourite programme onto a DVD. Each programme lasts exactly 45 minutes. Will she be able to record all the programmes onto a DVD that can hold 4 hours of programmes? Explain your answer carefully.

$$6 \times 45 \text{ minutes}$$

$$\begin{array}{r} 45 \\ \times 6 \\ \hline 270 \end{array}$$

$$4 \text{ hours} = 4 \times 60 \text{ minutes}$$

$$\begin{array}{r} 60 \\ \times 4 \\ \hline 240 \end{array}$$

No. She has 240 minutes of DVD available^[3] but needs 270 minutes.

15.

In a sports club, a fitness coach was asked about 4 different measurements.

Circle the appropriate quantity that you think the coach should give for each measurement. [4]

Weight of a man	900g	900kg	90mg	90kg
Length of a rugby pitch	122cm	122m	122mm	122km
Capacity of a bottle of water	75cl	75 litres	75cm ³	7.5 litres
Speed of a sprinter over 100 metres	90km/hr	9mph	9m/s	90m/s