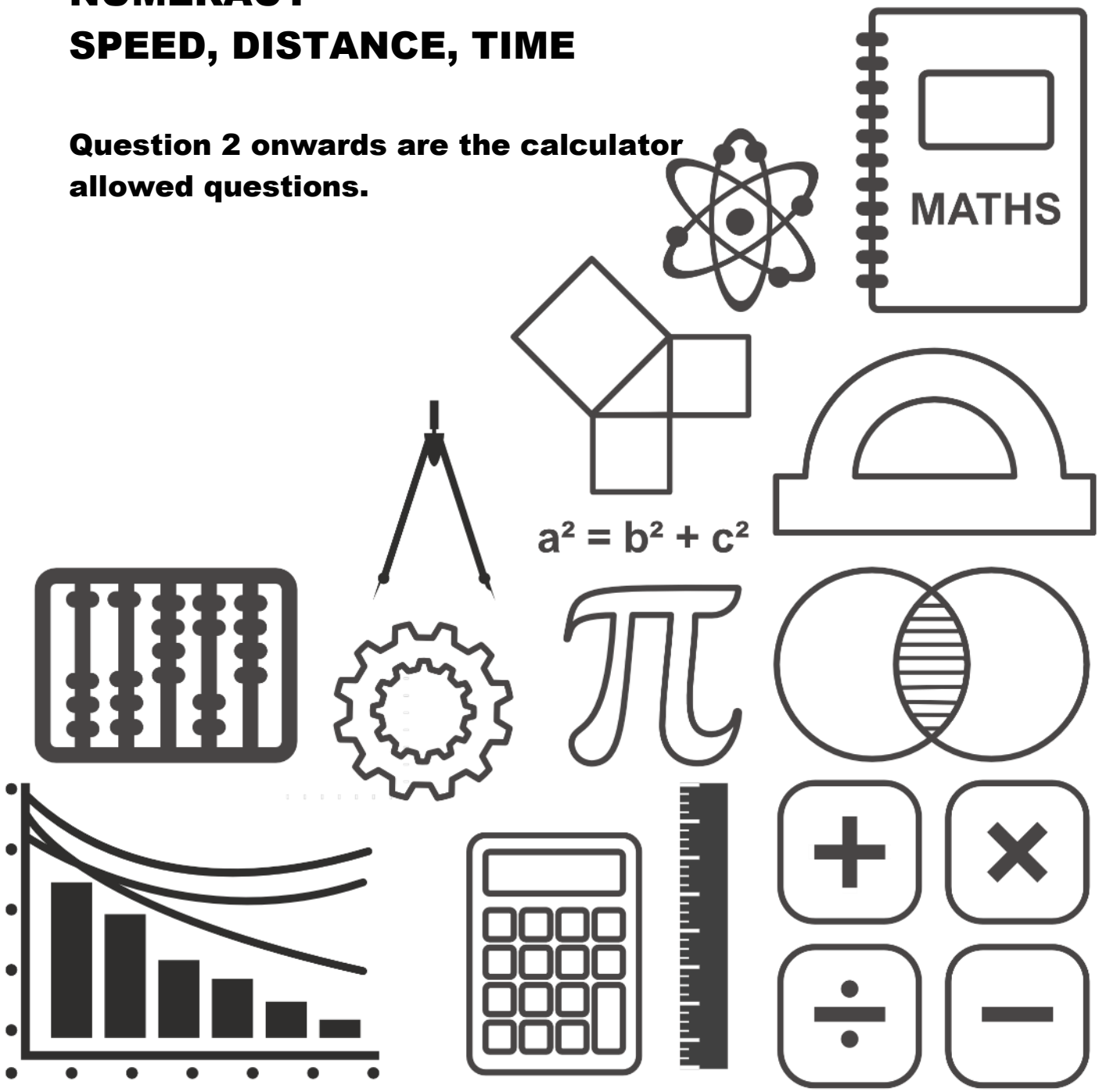
MATHSDIY

GCSE TOPIC BOOKLET
NUMERACY
SPEED, DISTANCE, TIME

Question 2 onwards are the calculator allowed questions.



1. A helicopter pilot is planning a route from Milford Haven to Ruabon and then on to Swansea.

The plan for the flight is shown below.

Journey	Average speed	Time
Milford Haven to Ruabon	90 mph	1 hour 20 minutes
Ruabon to Swansea	80 mph	1 hour 15 minutes

Calculate the total distance of the flight.
Give your answer in miles.
You must show all your working. [4]

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Total distance is ..... miles

2. Emyr has set his lawn mower to work at a constant speed of 2000 m per hour.
He walks a distance of 300 m when he cuts his lawn.

(a) (i) Use this information to calculate how long Emyr takes to cut his lawn.
Give your answer in minutes. [2]

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It takes Emyr ..... minutes.

(ii) What assumption have you made? [1]

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(iii) What impact would this have on the time you calculated in answering *(a)*(i)? [1]

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(b) Emyr cuts his lawn 25 times a year.
He uses 4·5 litres of petrol in his lawn mower each year.

How much petrol does the lawn mower use for every 100 metres that Emyr walks?
Give your answer in litres. [3]

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3. *(a)* Megan and Rhodri both set out at the same time from home to go to the swimming pool.
Rhodri travels by car.
Megan cycles straight through the park.

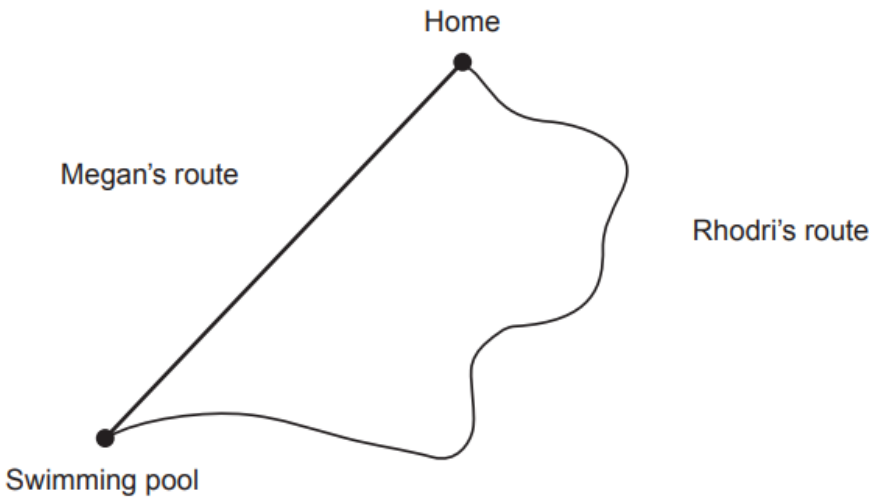

Diagram not drawn to scale

Rhodri's journey by car is 5·5 miles.
His average speed for the journey is 22 mph.

Megan's average speed on her bike is 12 mph.
Megan arrives at the swimming pool 5 minutes before Rhodri.

Calculate the distance Megan cycles.
Give your answer in miles.
You must show all your working. [5]

Distance Megan cycles is ..... miles

(b) Gary travelled a distance of 231 km in 3 hours and 30 minutes.
Calculate Gary's average speed in km/h.
Circle your answer. [1]

0·015 1·1 66 70 77

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4. Glenda plans to drive from Flint to Cardiff.
On a long journey, her average speed is usually 42 mph.
Last time she drove from Flint to Cardiff it took her $3\frac{1}{2}$ hours.

(a) Use this information to calculate the distance between Flint and Cardiff. [2]

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(b) Give a possible reason why your answer in *(a)* is only an estimate of the distance between Flint and Cardiff. [1]

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5. The first 40 miles of a journey took 1 hour 15 minutes.
The remaining 80 miles were completed in 2 hours 15 minutes.
Calculate the average speed, in mph, of the 120-mile journey. [3]

6. Gwenda enjoys road running.

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]

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Percentage improvement is ..... %