GCSE · Edexcel · Maths

2 hours 48 questions

Exam Questions

Standard & Compound Units

Time / Converting between Units / Squared & Cubic Units / Compound Measures / Speed, Density & Pressure

Easy (18 questions)	/24
Medium (15 questions)	/35
Hard (15 questions)	/47
Total Marks	**/106**

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Easy Questions

1 Work out the number of hours in 3 days.

.....hours

(1 mark)

2 Sami travels to work by bus.
The bus leaves the bus station at 0735.

i) It takes Sami 23 minutes to walk from his house to the bus station.

Work out the latest time Sami can leave his house.

[1]

ii) The bus journey takes 41 minutes.

Work out the arrival time of the bus.

[1]

(2 marks)

3 Change 5.3 kilometres into metres.

..... m [1]

(1 mark)

4 Write 3.25pm in the 24-hour clock.

(1 mark)

5 Change 4.6 metres to centimetres.

..... cm

(1 mark)

6 Change 560 metres into kilometres.

..... km

(1 mark)

7 Change 3670 centimetres to metres.

.....m

(1 mark)

8 Change 4365 metres into centimetres.

..... cm

(1 mark)

9 A mathematics lesson starts at 1105.
The lesson lasts for 75 minutes.

Work out the time that the lesson ends.

(1 mark)

10 Change 645 mm into cm.

..... cm

(1 mark)

11 The table shows the times of the high and low tides.

Day	1st high tide	1st low tide	2nd high tide	2nd low tide
Monday	0030	06 09	13 12	1835
Tuesday	0130	07 20	14 22	1952
Wednesday	0243	08 36	1537	21 06
Thursday	03 58	09 41	1644	2207
Friday	0500	10 35	17 37	2258

i) Write down the time of the 2nd high tide on Wednesday using the 12-hour clock.

[1]

ii) Work out the time between the two low tides on Thursday.

..... h ..... min [1]

iii) The surfing activity starts $1\frac{1}{2}$ hours before the high tide on Tuesday afternoon.

Write down the time that the surfing activity starts.

[1]

(3 marks)

12 George drives 315 km from the café to the airport.
The journey takes 3 hours 30 minutes.

Calculate his average speed.

..... km/h

(1 mark)

13 The distance between Madrid and Buenos Aires is 10050km.
Diego's return flight takes 12 hours 30 minutes.

Calculate the average speed, in km/h, for the return flight.

..... km/h

(1 mark)

14 A speedboat travels at 84 kilometres per hour.

Change this speed into metres per minute.

..... m/min

(2 marks)

15 Ivan walks 1.5 km from his home to Kingswood Park.
He takes 20 minutes.

Work out Ivan's average speed in kilometres per hour.

..... km/h

(1 mark)

16 $\text{Pressure} = \frac{\text{Force}}{\text{Area}}$

An object exerts a force of 300 N on an area of 5 m^2.

Find the pressure on the area, stating appropriate units.

(3 marks)

17 Convert 2345 millilitres into litres.

(1 mark)

18 Ambigha leaves her house at 10:15am.

She returns after 1 hour 35 minutes.

What time does Ambigha return to her house?

(1 mark)

Medium Questions

1 Change 4.37 litres into cubic centimetres.

.....cm^3

(1 mark)

2 These are the opening times of the café.

Monday to Friday	8am to 6pm
Saturday	9.30 am to 3pm
Sunday	Closed

Work out the total number of hours the café is open in one week.

..... hours

(2 marks)

3 A train from Woodton to Northley takes 6 hours 25 minutes.
The train leaves Woodton at 19 46.

Work out the time the train arrives at Northley.

(1 mark)

4 Work out the time 7 hours and 36 minutes before 13 26.

[1]

(1 mark)

5 The table shows part of a bus timetable.

Town Hall	1015	1035	1055	1115
City Gate	1032	1052	1112	1132
Beacon Hill	1058	1118	1138	1158
Kingswood Park	1110	1130	1150	1210

i) Yana leaves home at 1050.
She takes 14 minutes to walk to the bus stop at City Gate.

At what time does she reach the bus stop?

[1]

ii) She gets on the next bus at City Gate and travels to Kingswood Park.

At what time does this bus arrive at Kingswood Park?

[1]

iii) Work out how many minutes the bus takes to get from City Gate to Kingswood Park.

..... min [1]

(3 marks)

6 Musa has a glass that holds 250ml of water.
He drinks 5 of these glasses of water.
He fills his glass from a 2-litre bottle of water.

Work out how much water is left in the bottle.
Give your answer in millilitres.

..... ml

(2 marks)

7 Peter works these hours each week at a café.

Day	Time
Monday	0830 to 16 00
Tuesday	1000 to 17 00
Thursday	0830 to 16 30
Saturday	0800 to 18 30

Work out the number of hours he works in one week.

..... hours

(2 marks)

8 (a) A machine always takes 5 minutes to paint an 80 metre white line on a road.

Work out the number of metres painted in 45 minutes.

..... m

(1 mark)

(b) Work out the number of minutes taken to paint a 2.8 km line.

..... min

(2 marks)

9 Ramond walks 2460 metres in 33 minutes.

Work out Ramond's average speed in kilometres per hour.

..... km/h

(3 marks)

10 Kiran leaves home at 9.45 am.
She drives 135 km to visit a friend.
She arrives at her friend's house at 11.15 am.

Work out her average speed in km/h.

..... km/h

(2 marks)

11 A car travels at a constant speed of 20 m/s.

Work out the time it takes for the car to travel 10 km.
Give your answer in minutes and seconds.

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

(3 marks)

12 $\text{Pressure} = \dfrac{\text{Force}}{\text{Area}}$

A force, *F* Newtons, is applied to a rectangle which is 0.8 m wide, and 1.2 m long.

The pressure on the rectangle is 200 N/m^2.

Find the value of *F*.

F = ... N

(3 marks)

13 $\text{Density} = \dfrac{\text{Mass}}{\text{Volume}}$

If an object has a lower density than water, it will float.

A cuboid-shaped block of wood measures 8 cm wide, 20 cm long, and 10 cm high, and has a mass of 1360 grams.

Assuming the density of water is 1 gram per cm^3,
determine if the block of wood will float or not.

Show your working clearly.

(3 marks)

14 Change 2 cm^2 into mm^2.

(2 marks)

15 Petra washes and cleans cars.

The table shows information about the time it will take her to work on each of four cars that have arrived at her shop today.

Car	**Time**
Hatchback	2 hours 10 mins
Convertible	$1\frac{3}{4}$ hours
SUV	45 mins
Sports Car	2 hours

Petra has to complete her work on all four cars in one day.

She will have breaks for a total time of 80 minutes.

Petra is going to start working at 8:30 am. Will she be able to complete all her work by 3:30pm?

You must show all your working.

(4 marks)

Hard Questions

1 These are the opening times for a museum.

Monday to Friday	0900 to 1700
Saturday and Sunday	1000 to 1600

During opening hours the museum has 4 security guards working.
Each guard works a maximum of 30 hours each week.

Work out the smallest number of guards needed each week.

(4 marks)

2 (a) Diego flies from Madrid to Buenos Aires.
His flight leaves at 20 55 and arrives at 03 50 local time.
The local time in Buenos Aires is 5 hours behind the local time in Madrid.

Work out, in hours and minutes, the time the flight takes.

..... h ..... min
(2 marks)

(b) Diego changes 200 euros into Argentine Peso.
The exchange rate is 1 euro = 24.8 pesos.

Work out how many pesos he receives.

..... pesos

(1 mark)

3 The month of July has 31 days.

Calculate the number of seconds in the month of July.

..... seconds

(2 marks)

4 Find the number of minutes from 1758 to 7.13 pm.

..... min

(2 marks)

5 (a) Complete these statements.

6 m is the same length as .....mm.

[1]

(1 mark)

(b) 7000 cm^2 is the same area as .....m^2.

(1 mark)

6 Complete the statements.

3.5 kg = ... g

1.4 m^2 = ... cm^2

(2 marks)

7 A shop is open for 6 days each week.
On each day, the shop is open from 09 30 until 13 00 and from 14 15 until 20 30.

Work out the total number of hours the shop is open in one week.

..... hours

(2 marks)

8 (a) A plane leaves Karachi at 1530 to fly to Bangkok.
The distance is 3840 km.

The plane flies at an average speed of 720 km/h.
The local time in Bangkok is 2 hours ahead of the local time in Karachi.

Find the local time in Bangkok when the plane arrives.

(4 marks)

(b) In Bangkok a watch costs 2610baht.
The exchange rate is $1 = 34.8 baht.

Find the cost of the watch in dollars.

$.....

(2 marks)

9 Change $4.1m^3$ into cm^3.

.....cm^3

(1 mark)

10 Seven students want to join the school diving club.
Some information about these students is recorded in the table below.

Name	Month and year of birth	Height (metres)	Distance each student can swim (metres)
Arj	November 2004	1.62	200
Biva	October 2006	1.43	500
Cala	February 2006	1.53	1500
Dainy	January 2007	1.56	1000
Elu	December 2005	1.64	600
Ful	August 2006	1.52	1000
Gani	January 2006	1.46	1000

To join the diving club you must be

- at least 12 years old in March 2018

and

- at least 150 centimetres tall

and

- able to swim at least 0.5 kilometres.

Write down the names of the students who can join the club.

(2 marks)

11 The plane flies from Melbourne to Tokyo at an average speed of 783 km/h.
The distance from Melbourne to Tokyo is 8352 km.
The plane leaves Melbourne at 0952 local time.
The local time in Tokyo is 2 hours behind the local time in Melbourne.

Find the local time in Tokyo when the plane arrives.

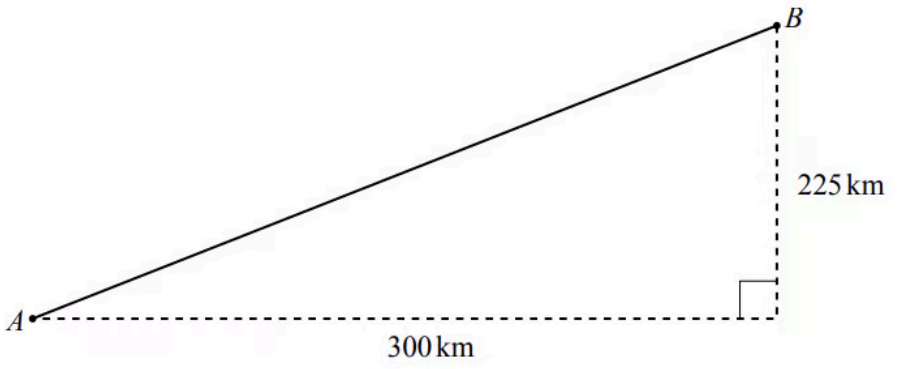
(4 marks)

12 A car travels at a constant speed of 45 kilometres per hour for 5 minutes.
Each wheel of the car has radius 25 centimetres.

Calculate the number of complete revolutions that a wheel makes during the 5 minutes.

(5 marks)

13 The diagram shows the path of a plane from airport A to airport B.



i) Show that the distance between A and B is 375km.

[2]

ii) The plane flies at an average speed of 450km/h.
It leaves A at 1445 and flies directly to B.

Work out the time the plane arrives at B.

[4]

(6 marks)

14 $\text{Pressure} = \dfrac{\text{Force}}{\text{Area}}$

A force of 300 N is exerted on a rectangle of width 20 cm, and length x cm.

The pressure on the rectangle is 0.6 N/cm^2.

Find the value of x.

(3 marks)

15 $\text{Density} = \dfrac{\text{Mass}}{\text{Volume}}$

If an object has a lower density than water, it will float.

A cuboid-shaped block of wood measures 0.2 **m** wide, 0.2 **m** long, and 0.1 **m** high, and has a mass of 3 **kilograms**.

Assuming the density of water is 1 **gram** per **cm^3**, determine if the block of wood will float or not.

Show your working clearly.

(3 marks)