

Write your name here

Surname

Other names

Centre Number

Candidate Number

Edexcel GCSE

Mathematics B

**Unit 2: Number, Algebra, Geometry 1
(Non-Calculator)**

Foundation Tier

Monday 14 November 2011 – Morning

Time: 1 hour 15 minutes

Paper Reference

5MB2F/01

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. Tracing paper may be used.

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.*
- **Calculators must not be used.**



Information

- The total mark for this paper is 60.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed.

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.

Turn over ►

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6/6/6/4



P 4 0 1 1 6 A 0 1 2 0

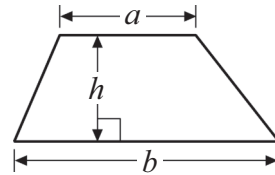
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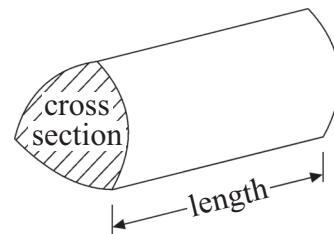
Formulae: Foundation Tier

**You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.**

Area of trapezium = $\frac{1}{2}(a + b)h$



Volume of prism = area of cross section $\times$ length

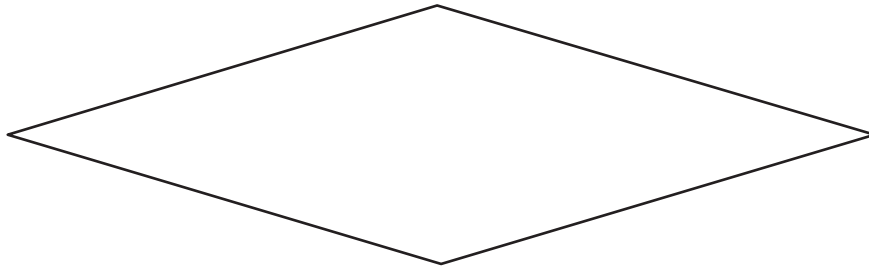


Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

- 1** This quadrilateral has all 4 sides the same length.



- (a) Write down the special name of this quadrilateral.

.....
(1)

- (b) On the shape, draw all the lines of symmetry.

(1)

(Total for Question 1 is 2 marks)



2 (a) Write the number **ten thousand five hundred and seventy** in figures.

.....
(1)

(b) Work out $56\,000 \div 100$

.....
(1)

(c) Write these numbers in order of size.
Start with the smallest number.

3.95

2.17

5.03

6.84

.....
(1)

(d) Write down the value of

(i) the square of 7

(ii) 2^3

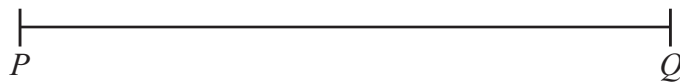
.....
(2)

(Total for Question 2 is 5 marks)



- 3 (a) Measure the length of the line PQ .

Give your answer in centimetres.

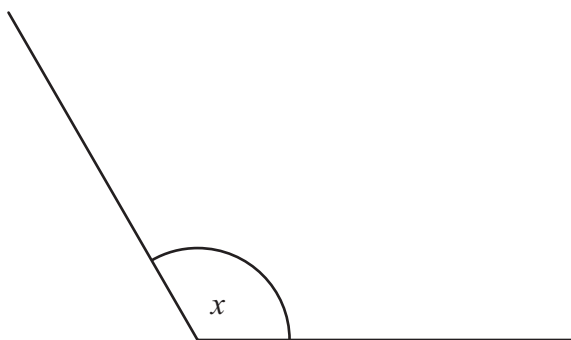


..... cm
(1)

- (b) Mark with a cross ($\times$) the point on the line PQ that is 5 cm from Q .

(1)

- (c)



- (i) Write down the special name for angle x .

.....

- (ii) Measure the size of angle x .

.....
(2)

(Total for Question 3 is 4 marks)



- 4 Priya and Amit are going on holiday with their 3 children.

The table gives information about the cost of travel and the cost of the hotel.

Travel	Each adult	£60
	Each child	£50
Hotel	Room for 2 adults	£45 per night
	Room for 3 children	£55 per night

Priya and Amit have saved £1500 for their holiday.
They will be away for 7 nights.

Work out how much of the £1500 they will have left to spend on their holiday.

£

(Total for Question 4 is 4 marks)



5

Day	Weather	maximum day temperature (°C)	minimum night temperature (°C)
Sunday	 Sunny	-9°C	-15°C
Monday	 Sunny Intervals	-6°C	1°C
Tuesday	 Grey Cloud	-1°C	-3°C
Wednesday	 Sunny Intervals	0°C	-2°C
Thursday	 Sunny Intervals	5°C	2°C

The table shows information about the weather forecast for 5 days.

(a) What is the highest minimum **night** temperature?

..... °C
(1)

(b) (i) Which day has the greatest difference between the maximum day temperature and the minimum night temperature?

.....

(ii) What is this difference in temperature?

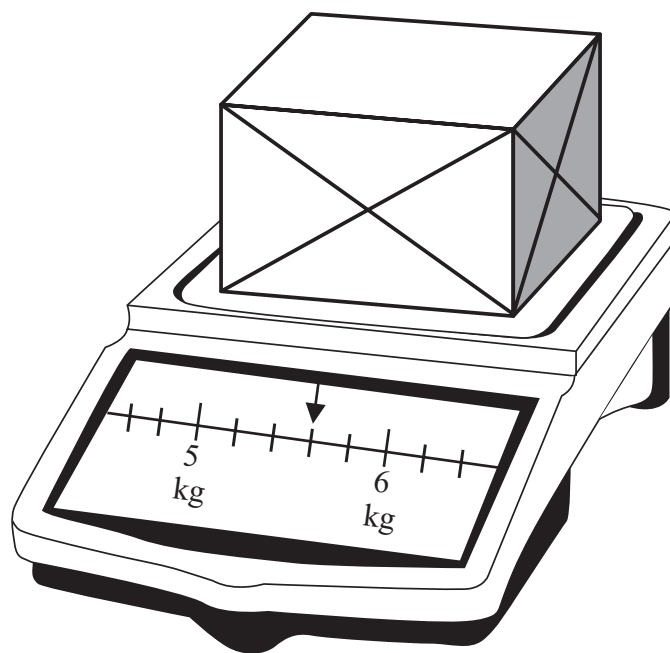
..... °C
(2)

(Total for Question 5 is 3 marks)



P 4 0 1 1 6 A 0 7 2 0

6 A parcel is being weighed.



(a) Write down the weight of the parcel.

..... kg
(1)

The table shows information about the cost of posting parcels.

maximum weight	2 kg	4 kg	6 kg	8 kg	10 kg	20 kg
cost	£4.41	£7.06	£9.58	£11.74	£12.61	£14.69

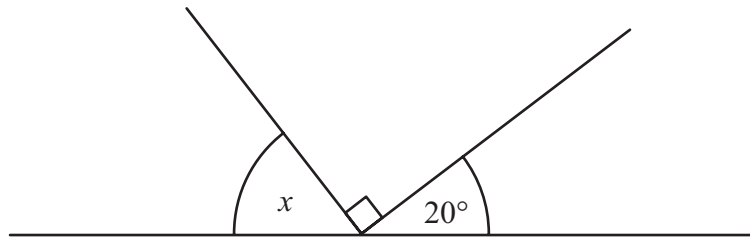
(b) Write down the cost of posting the parcel.

£
(1)

(Total for Question 6 is 2 marks)



7

Diagram **NOT**
accurately drawn

- (i) Work out the size of the angle marked x .

○

- (ii) Give a reason for your answer.

(Total for Question 7 is 2 marks)

*8

Calculators
£6 each

1 free calculator
with every 4 calculators bought

Jessie needs to buy 28 calculators.
She has £140

Has Jessie enough money to get 28 of these calculators?
You must show all your working.

(Total for Question 8 is 3 marks)



- 9 There are 240 students at Walbridge school.
15% of these students are left-handed.

(a) Work out how many students are left-handed.

.....
(2)

$\frac{1}{3}$ of the 240 students are female.

(b) How many of the students are female?

.....
(1)

80 of the students walk to school.

60 of the students cycle to school.

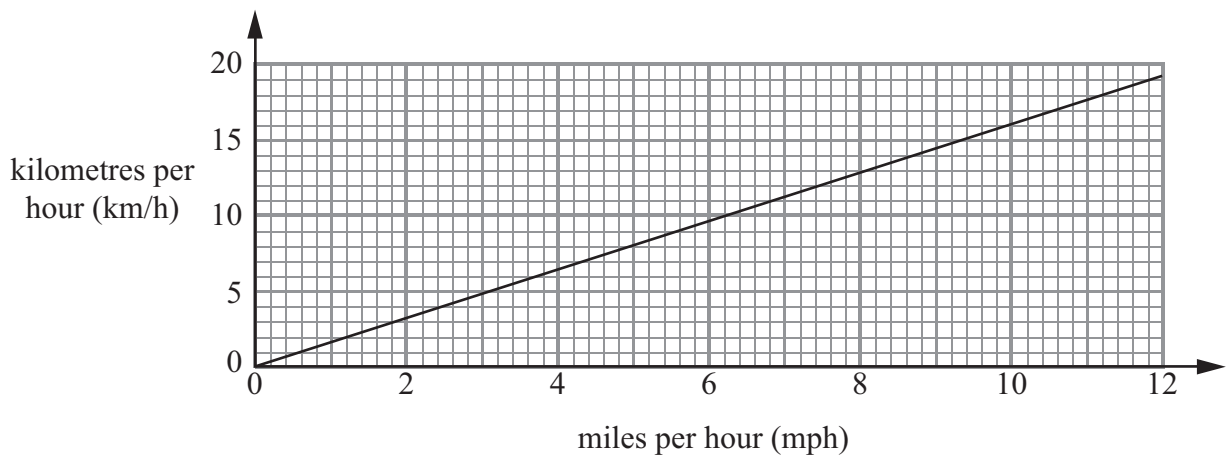
(c) Write the ratio of the number of students who walk to school to the number of students who cycle to school.
Give your ratio in its simplest form.

.....
(2)

(Total for Question 9 is 5 marks)



10



This conversion graph can be used to change between kilometres per hour (km/h) and miles per hour (mph).

(a) Use the conversion graph to change 10 mph to km/h.

..... km/h
(1)

(b) Use the conversion graph to change 4 km/h to mph.

..... mph
(1)

Stefan runs at an average speed of 6 mph.

Debbie runs at an average speed of 10.5 km/h.

(c) (i) Who has the greater average speed, Stefan or Debbie?

.....

(ii) How did you get your answer?

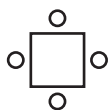
.....
.....
(2)

(Total for Question 10 is 4 marks)

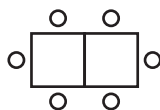


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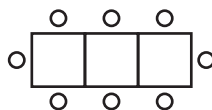
- 11 Here are the first four patterns in a sequence.
Each pattern is made from squares and circles.



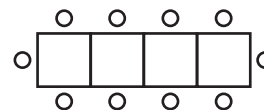
Pattern number 1



Pattern number 2



Pattern number 3



Pattern number 4

- (a) How many squares are there in the pattern with exactly 14 circles?

.....
(2)

- (b) How many circles are needed for Pattern number 50?

.....
(2)

(Total for Question 11 is 4 marks)

- 12 Simplify

$$3x + 5y + x + 4y$$

.....
(Total for Question 12 is 2 marks)



13 (a) Work out $20 - 12 \div 4$

.....
(1)

(b) Put brackets in to make this a true statement.

$$5 + 3 \times 2 - 1 = 15$$

(1)

(c) Work out -8×-3

.....
(1)

(d) Work out $\frac{7}{10} + \frac{1}{5}$

.....
(2)

(Total for Question 13 is 5 marks)



- *14 This formula is used to work out the body mass index, B , for a person of mass M kg and height H metres.

$$B = \frac{M}{H^2}$$

A person with a body mass index between 25 and 30 is overweight.

Arthur has a mass of 96 kg.

He has a height of 2 metres.

Is Arthur overweight?

You must show all your working.

(Total for Question 14 is 3 marks)



- 15 The diagram shows **shape A**.
All the measurements are in centimetres.

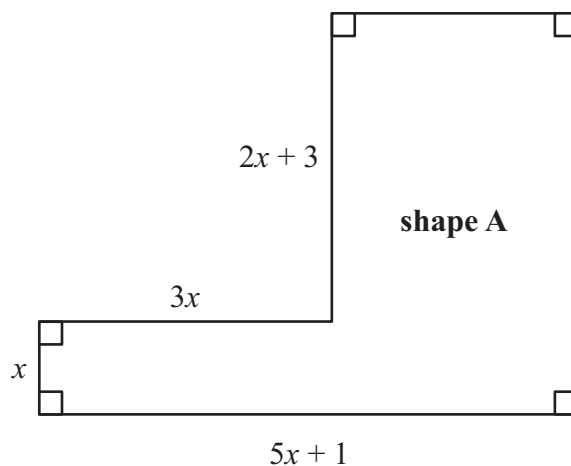


Diagram **NOT**
accurately drawn

- (a) Find an expression, in terms of x , for the perimeter of **shape A**.

.....
(3)

A square has the same perimeter as **shape A**.

- (b) Find an expression, in terms of x , for the length of one side of this square.

.....
(1)

(Total for Question 15 is 4 marks)



- 16 Jake makes a picture frame from 4 identical pieces of card. Each piece of card is in the shape of a trapezium.

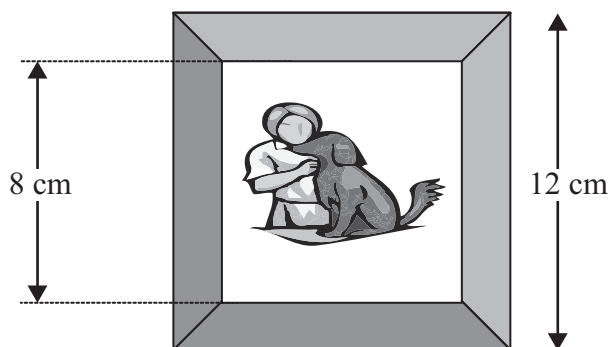


Diagram **NOT** accurately drawn

The outer edge of the frame is a square of side 12 cm.
The inner edge of the frame is a square of side 8 cm.

Work out the area of each piece of card.

..... cm²

(Total for Question 16 is 4 marks)



*17

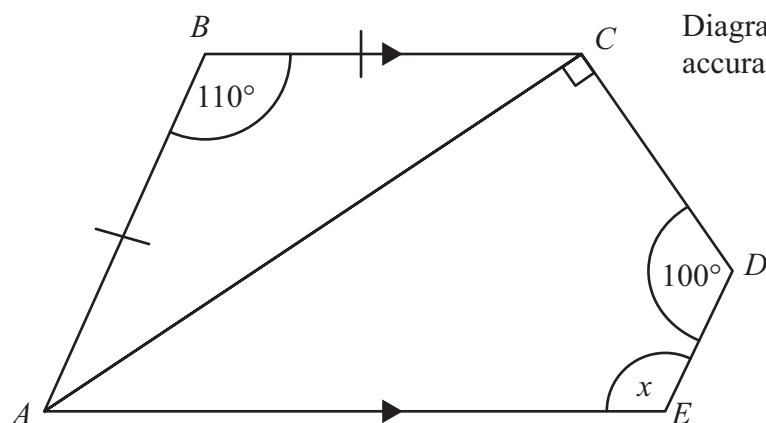


Diagram **NOT**
accurately drawn

ABC is an isosceles triangle.

$AB = BC$.

Angle $ABC = 110^\circ$.

$ACDE$ is a quadrilateral.

Angle $CDE = 100^\circ$.

Angle ACD is a right-angle.

AE is parallel to BC .

Work out the size of the angle marked x .

Give reasons for each stage of your working.

(Total for Question 17 is 4 marks)

TOTAL FOR PAPER IS 60 MARKS



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