Write your name here

Surname	Other names

Pearson Edexcel GCSE

Centre Number | | | | | |

Candidate Number | | | | |

Applications of Mathematics

Unit 2: Applications 2

For Approved Pilot Centres ONLY

Foundation Tier

Thursday 8 June 2017 – Morning
Time: 1 hour 45 minutes

Paper Reference
5AM2F/01

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. 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 may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

- The total mark for this paper is 100.
- 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 ▶

P53501A

1/6/7/

P 5 3 5 0 1 A 0 1 2 4

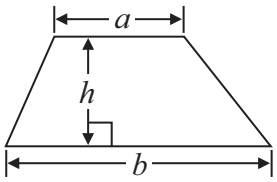
Pearson

GCSE Mathematics 2AM01

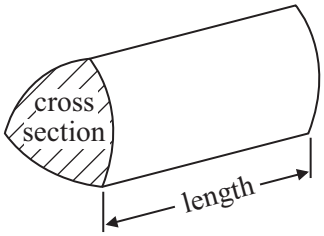
Formulae: Foundation Tier

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 × length



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Susan uses 1750 millilitres of water to make some soup.

(a) Write 1750 millilitres in litres.

..... litres

(1)

Keith measures the length of a piece of wood as 2500 mm.

(b) Write 2500 mm in metres.

..... metres

(1)

Jeff rides his bike for 200 minutes.

(c) Write 200 minutes in hours and minutes.

..... hours ..... minutes

(2)

Priti's car has a weight of 1.8 tonnes.

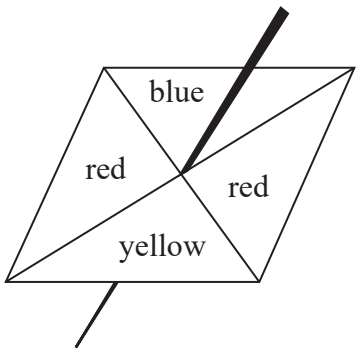
(d) How many kilograms are there in 1.8 tonnes?

..... kilograms

(1)

(Total for Question 1 is 5 marks)

2 Here is a fair 4-sided spinner for a game.



Jemima spins the spinner.

impossible	unlikely	evens	likely	certain

(a) Use a word from the box that best describes the chance of each of the following events.

(i) Jemima gets a blue.

.....

(ii) Jemima gets a red.

.....

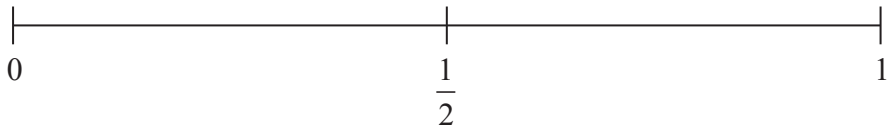
(2)

There are 8 coins in a bag.
There are

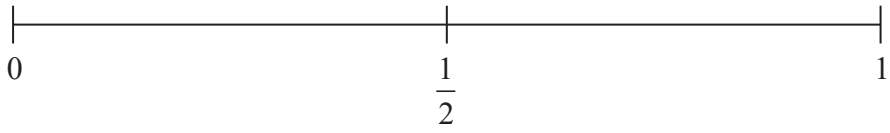
three 10p coins
four 5p coins
one 2p coin

Ravi takes at random a coin from the bag.

(b) (i) On the probability scale below, mark with a cross (×) the probability that Ravi will take a 50p coin.



(ii) On the probability scale below, mark with a cross (×) the probability that Ravi will take a 5p coin.



(2)

(Total for Question 2 is 4 marks)

3 There are 6528 people at an airport.

(a) Write down the value of the **2** in the number 6528

.....

(1)

A suitcase has a weight of 19.54 kg.

(b) Write down the value of the **5** in the number 19.54

.....

(1)

On a plane, the maximum weight allowed for hand luggage is 7.5 kg.

Judy's hand luggage has a weight of 7765 g.
Judy's hand luggage is too heavy.

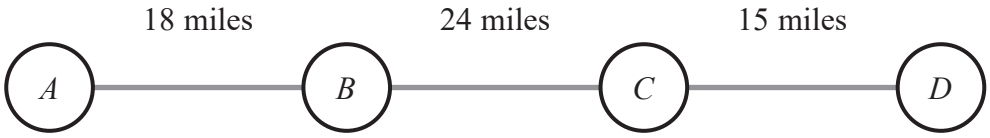
(c) By how much is her hand luggage too heavy?

.....

(2)

(Total for Question 3 is 4 marks)

4 The diagram shows four motorway service stations *A*, *B*, *C* and *D*.



The diagram also shows the distances between the service stations.

(a) Work out the distance from *A* to *D*.

..... miles

(2)

It is further from *A* to *C* than from *B* to *D*.

(b) How much further?

..... miles

(2)

There is a telephone every mile from *B* to *C*.

The first telephone is at *B*.
The last telephone is at *C*.

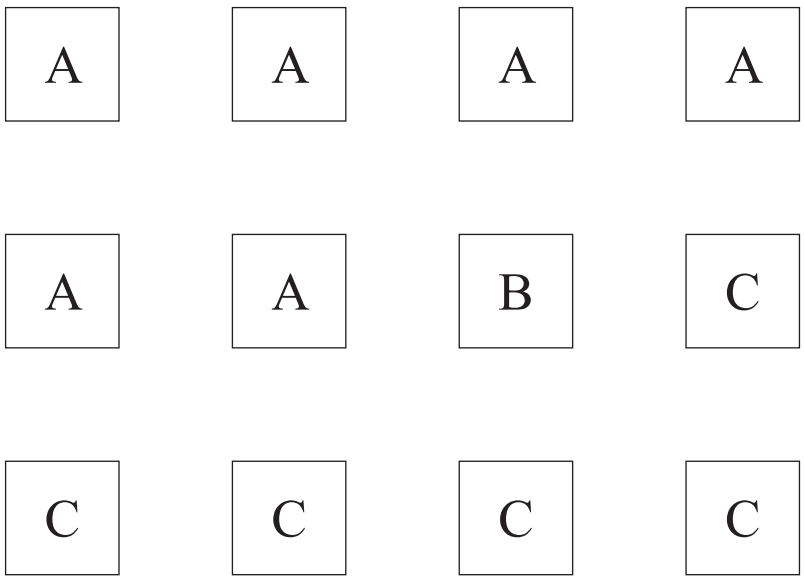
(c) Work out the number of telephones there are from *B* to *C*.

.....

(2)

(Total for Question 4 is 6 marks)

5 The diagram shows 12 cards.
There is a letter on each card.
The cards are used in a game.



Becca takes at random one of these cards.

(a) Which letter is **most** likely to be on the card she takes?

.....

(1)

(b) What is the probability that Becca takes a card with the letter B on it?

.....

(1)

(c) What is the probability that Becca takes a card with the letter A or the letter B on it?

.....

(2)

(Total for Question 5 is 4 marks)

6 Gina buys watches from a company.

She uses this rule to work out the selling price of each watch.

selling price = multiply cost price by 2 and then add £5

Gina buys a watch that has a cost price of £12

(a) Work out the selling price of this watch.

£.....

(2)

A different watch has a selling price of £57

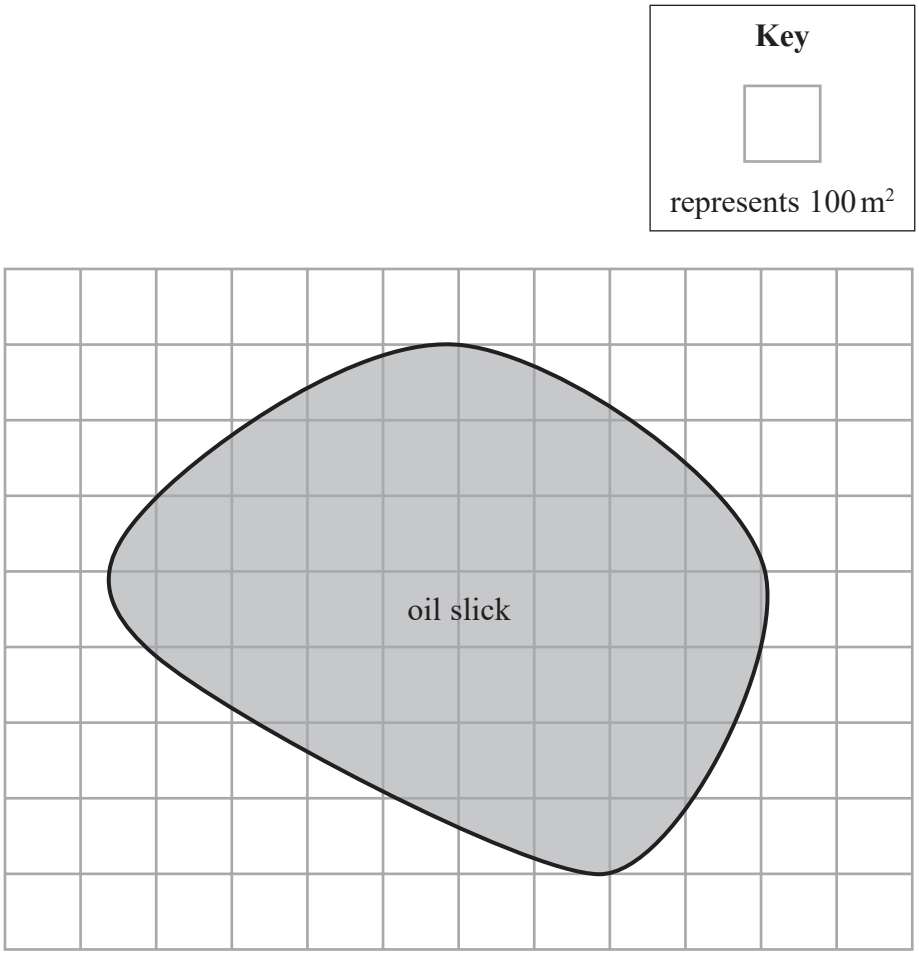
(b) Work out the cost price of this watch.

£.....

(3)

(Total for Question 6 is 5 marks)

7 On this grid, every centimetre square represents 100 m^2.
An oil slick is shown shaded on the grid.



Find an estimate for the area of the oil slick.

.....

(Total for Question 7 is 4 marks)

8 Here is Sunita's exam timetable for the first week of exams.
The timetable shows the subject of each exam and the length of time of the exam.

	Morning **Start time 09 15**	**Afternoon** **Start time 14 00**
Monday	Science 1 hour 10 minutes	Maths 1 hour 45 minutes
Tuesday		English 1 hour 30 minutes
Wednesday	History 2 hours	
Thursday	Maths 1 hour 45 minutes	
Friday		PE 1 hour

(a) What time will Sunita's science exam finish?

.....

(1)

On Friday, Sunita gets to school at 13 15

(b) How long does she have to wait to start her PE exam?
Give your answer in minutes.

..... minutes

(1)

The total length of Raj's exams in the first week is 530 minutes.

*(c) Who has the greater total length of time in exams in the first week, Raj or Sunita?
You must show all your working.

(4)

(Total for Question 8 is 6 marks)

9 Brightwell School has a concert to raise money for charity.
All the profit from the concert will go to charity.

The school only has to pay
£1200 to use the hall for the concert
£480 for all the other things they need for the concert

The school sells 500 tickets for the concert.
The full price of a ticket is £7.50
The price of a student's ticket is £2.50

The school sells
380 of the tickets at the full price
the rest of the tickets at the student price

Work out how much money will go to charity.

£.....

(Total for Question 9 is 6 marks)

10 The table shows the cost of posting some large letters.

Weight range	Cost
0 g – 100 g	96p
101 g – 250 g	£1.27
251 g – 500 g	£1.71
501 g – 750 g	£2.66

16 large letters each weigh 50 g.

(a) What is the total cost of posting these 16 letters?

£.....

(2)

Derek posts 8 large letters.
Each letter weighs 300 g.
Derek pays with a £20 note.

(b) How much change should Derek get?

£.....

(3)

Fiona has some leaflets to post.

She can post them as 12 large letters that each weigh 200 g
or
she can post them as 6 large letters that each weigh 400 g.

*(c) Which is the cheaper way for Fiona to post the leaflets?
You must show your working.

(3)

(Total for Question 10 is 8 marks)

11 Amy bakes x cakes.
Barry bakes four times as many cakes as Amy.
Ceri bakes 12 more cakes than Amy.

They bake a total of T cakes.

(a) Find a formula, in terms of x, for the total number of cakes.
Give your formula in its simplest form.

.....

(3)

Amy bakes 6 cakes.

(b) Work out the total number of cakes Amy, Barry and Ceri bake.

.....

(2)

(Total for Question 11 is 5 marks)

12 The diagram shows part of a roof.

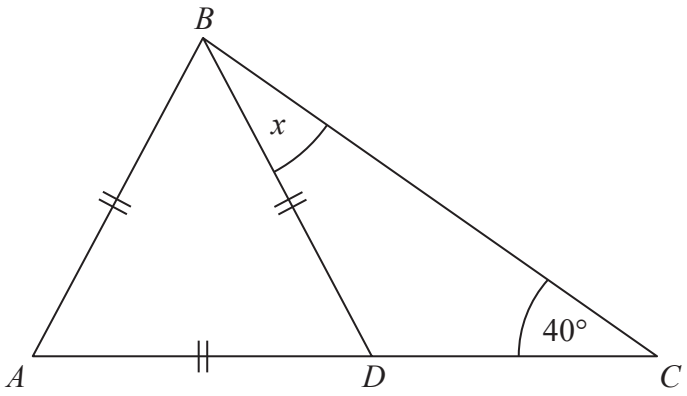


Diagram **NOT** accurately drawn

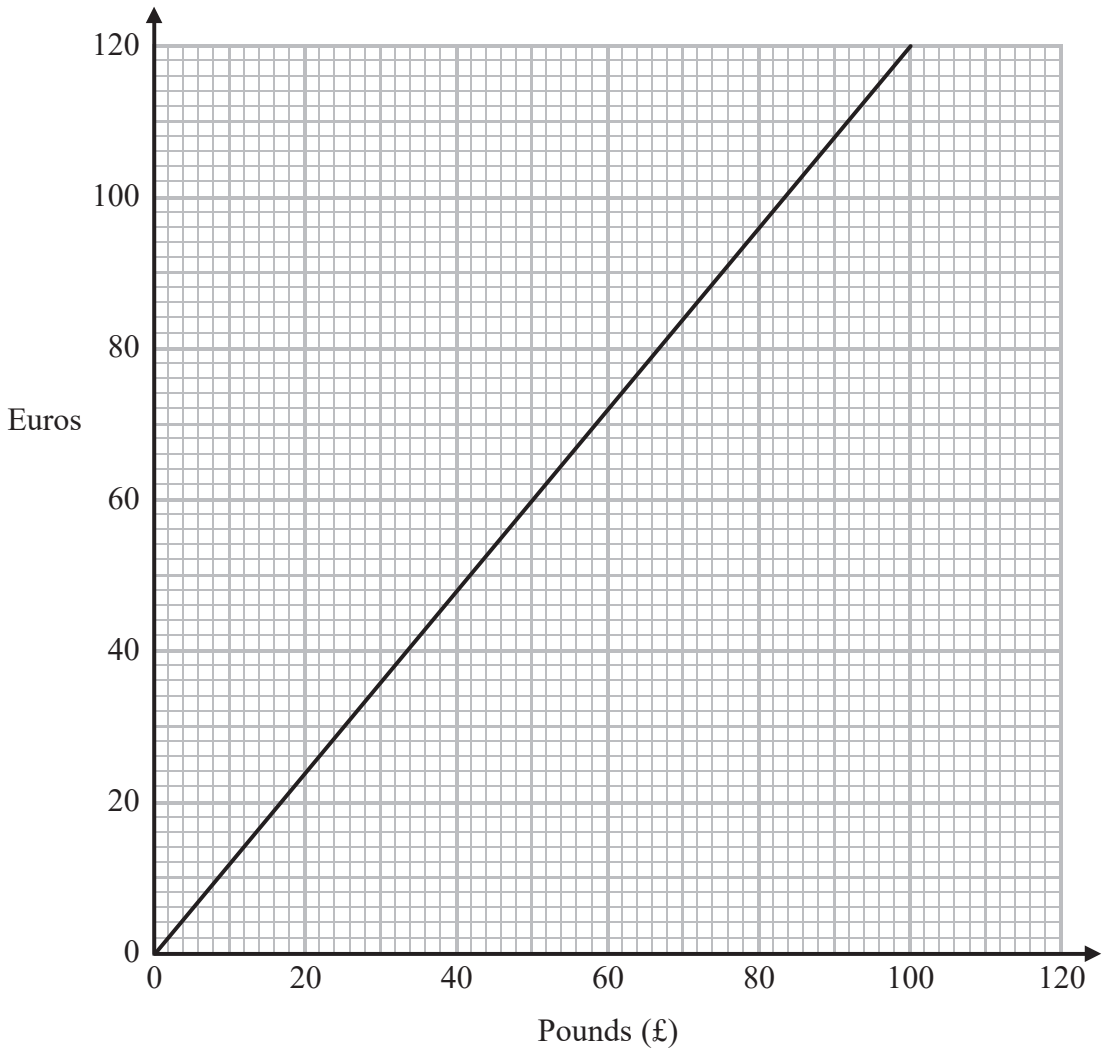
ABD is an equilateral triangle.
ADC is a straight line.

Work out the size of angle *x*.

.....°

(Total for Question 12 is 3 marks)

13



This graph can be used to convert between pounds (£) and euros.

Jill changes £400 into euros.
She spends 420 euros.

How many euros does she have left?

..... euros

(Total for Question 13 is 3 marks)

14 The diagram shows a box for chocolates.
The box is in the shape of a triangular prism.

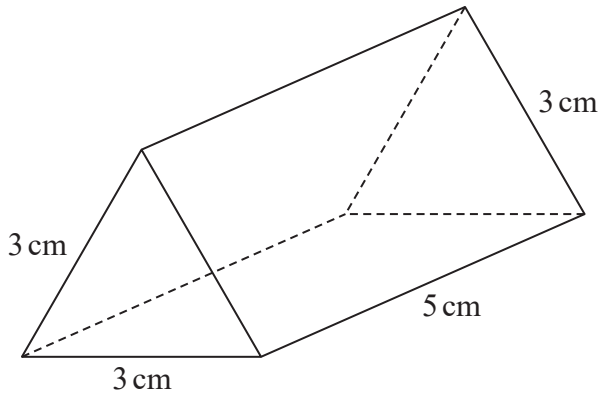


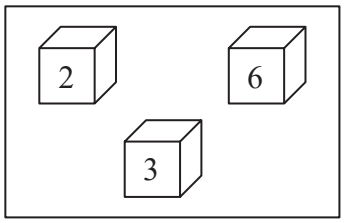
Diagram **NOT** accurately drawn

In the space below, draw an accurate net of this box.

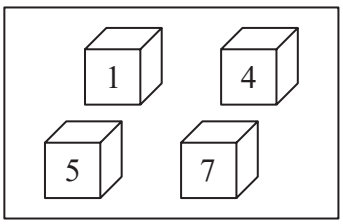
(Total for Question 14 is 3 marks)

15 There are some cubes in two boxes.
There is a number on each cube.

Box A



Box B



Erin takes at random one cube from Box A.
She then takes at random one cube from Box B.

(a) List all the pairs of numbers Erin can take.

.....

.....

.....

(2)

Steph plays a game with the cubes.

She takes at random a cube from each box.
She adds the two numbers on the cubes to get her score.

Steph wins the game if she gets a score of 10

(b) Work out the probability that she wins the game on her first attempt.

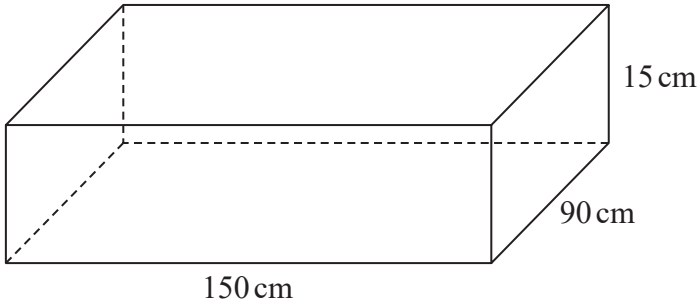
.....

(3)

(Total for Question 15 is 5 marks)

***16** The diagram shows a sandpit in the shape of a cuboid.

Diagram **NOT** accurately drawn



The sandpit is 150 cm by 90 cm by 15 cm.

The sandpit is empty.
Josie is going to put sand into the sandpit.

A bag of sand costs £3.99
There are 10 000 cm^3 of sand in a bag.

Josie has only £80 to spend on sand.

Show that Josie cannot buy enough sand to fill the sandpit completely.
You must show all your working.

(Total for Question 16 is 5 marks)

17 Rashmi works at a home for dogs.

She has 4 types of dog food to feed the dogs.
She takes at random a tin of dog food.

The table below shows the probabilities that Rashmi will take a tin of lamb dog food or a tin of beef dog food or a tin of turkey dog food.

Dog Food	lamb	beef	chicken	turkey
Probability	0.35	0.25		0.30

(a) Work out the probability that Rashmi will take a tin of chicken dog food.

.....

(2)

(b) Work out the probability that Rashmi will take a tin of turkey dog food or a tin of lamb dog food.

.....

(2)

Rashmi has 400 tins of dog food.

(c) Work out the number of tins of lamb dog food she has.

.....

(2)

(Total for Question 17 is 6 marks)

***18** Here are the ingredients to make 12 cupcakes.

For **12** cupcakes
200 g butter
200 g caster sugar
4 eggs
250 g flour

Mark is making cupcakes to sell at his school play.
Mark wants to make 1 cupcake for each adult and 2 cupcakes for each child.

There will be 152 adults and 80 children at the school play.

Mark can get these ingredients from the school kitchen.

5 kg butter
5 kg caster sugar
90 eggs
5 kg flour

Make a shopping list of any ingredients Mark still needs, showing the amount of each ingredient.
You must show all your working.

(Total for Question 18 is 5 marks)

19 GasIn is an insurance company that insures central heating systems.

GasIn insures 350 000 central heating systems each year.
GasIn charges £55 to insure a central heating system for a year.

The probability that a central heating system will develop a fault is 0.18
The average claim for a central heating system fault is £273

How much profit is GasIn likely to make in a year?

£.....

(Total for Question 19 is 4 marks)

***20** Abigail is 5 years older than Brenda.
Brenda is twice as old as Carly.

The total of their ages is less than 40

What is Abigail's greatest possible age?
Give your answer as a whole number of years.

(Total for Question 20 is 4 marks)

21 The diagram shows a wire frame.
The frame is a rectangle and two diagonals.

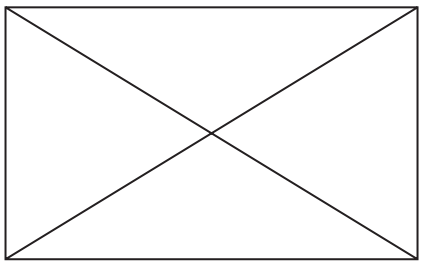


Diagram **NOT** accurately drawn

Work out the total length of the wire used to make the frame.
Give your answer correct to the nearest centimetre.

..... cm

(Total for Question 21 is 5 marks)

TOTAL FOR PAPER IS 100 MARKS

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