Write your name here

Surname	Other names

Pearson Edexcel Certificate
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International GCSE

Centre Number | | | | | |

Candidate Number | | | | |

Mathematics A

Paper 1F

Foundation Tier

Thursday 21 May 2015 – Morning
Time: 2 hours

Paper Reference
4MA0/1F
KMA0/1F

You must have:
Ruler graduated in centimetres and millimetres, protractor, 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.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided
  – there may be more space than you need.
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page.
  Anything you write on the formulae page will gain NO credit.

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.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

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1/1/1/

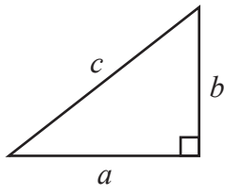
P 4 4 3 8 6 A 0 1 2 8

PEARSON

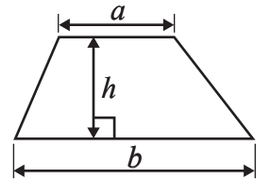
International GCSE MATHEMATICS

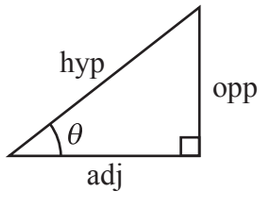
FORMULAE SHEET – FOUNDATION TIER

Pythagoras' Theorem
$a^2 + b^2 = c^2$



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





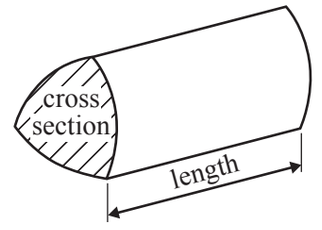
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

or $\sin\theta = \frac{\text{opp}}{\text{hyp}}$

$\cos\theta = \frac{\text{adj}}{\text{hyp}}$

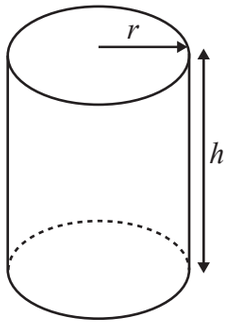
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



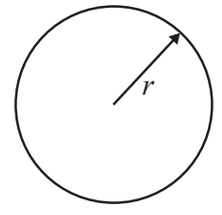
Circumference of circle = $2\pi r$

Area of circle = πr^2



Volume of cylinder = $\pi r^2 h$

Curved surface area of cylinder = $2\pi rh$



Answer ALL TWENTY FOUR questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 Here is a list of numbers.

98 483 530 384 498

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

.....

(1)

(b) From the list, write down the odd number.

.....

(1)

(c) From the list, write down the number which is a multiple of 5

.....

(1)

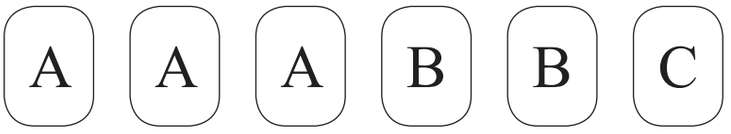
(d) Work out the difference between the largest number in the list and the smallest number in the list.

.....

(1)

(Total for Question 1 is 4 marks)

2 Here are 6 counters.
Each counter has a letter on it.



Karl takes at random one of these counters.

Here is a list of words used in probability.

impossible	unlikely	evens	likely	certain

Using a word from the list, write down the likelihood that Karl takes

(i) a counter with the letter A on it,

.....

(ii) a counter with the letter C on it,

.....

(iii) a counter with the letter X on it.

.....

(Total for Question 2 is 3 marks)

3 (a) Write the number 4832 correct to the nearest 100

.....

(1)

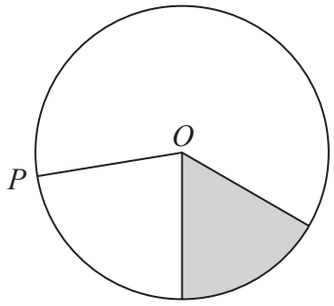
(b) Write down the value of the 6 in the number 46 328

.....

(1)

(Total for Question 3 is 2 marks)

4



P is a point on the circle, centre O.

(a) Write down the mathematical name of the line OP.

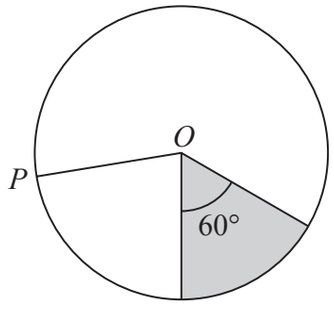
.....

(1)

(b) Write down the mathematical name of the shaded region.

.....

(1)



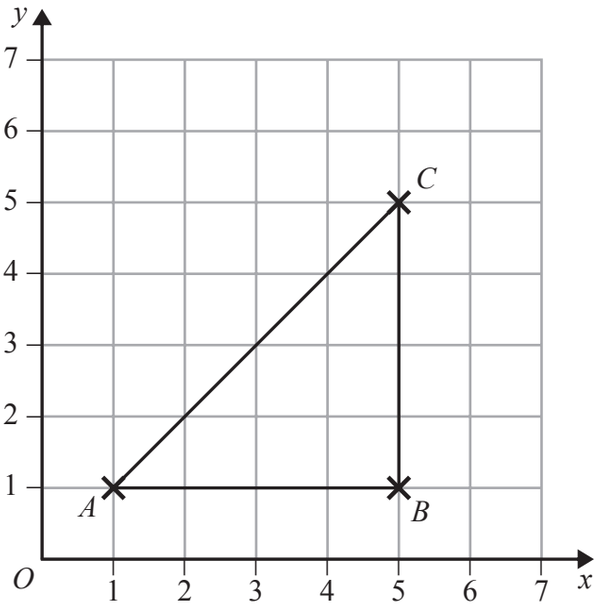
(c) Write down the fraction of the circle that is shaded.
Give your fraction in its simplest form.

.....

(2)

(Total for Question 4 is 4 marks)

5 The diagram shows triangle *ABC* drawn on a centimetre grid.



(a) Write down the coordinates of the point *B*.

(..... , ...)

(1)

(b) Measure the length of the line *AC*.
Give your answer in millimetres.

..... mm

(1)

(c) Find the area of triangle *ABC*.

..... cm^2

(2)

D is the point such that *ABCD* is a trapezium with *AD* = 3 cm.

(d) On the grid, mark with a cross (×) the position of the point *D*.
Label your point with the letter *D*.

(1)

(Total for Question 5 is 5 marks)

6 Here is a number machine.

(a) Find the output when the input is 3

.....

(1)

(b) Find the output when the input is –7

.....

(1)

(c) Find the input when the output is 140

.....

(1)

The input is x.
The output is y.

(d) Write down a formula for y in terms of x.

.....

(2)

(Total for Question 6 is 5 marks)

7 The cost of a litre of petrol in Hong Kong is 17.50 Hong Kong dollars ($).

Chen buys 25 litres of petrol in Hong Kong.

The only money he has to pay with are $50 notes.

(a) What is the smallest number of $50 notes he needs?

.....

(3)

He pays with the smallest number of $50 notes.

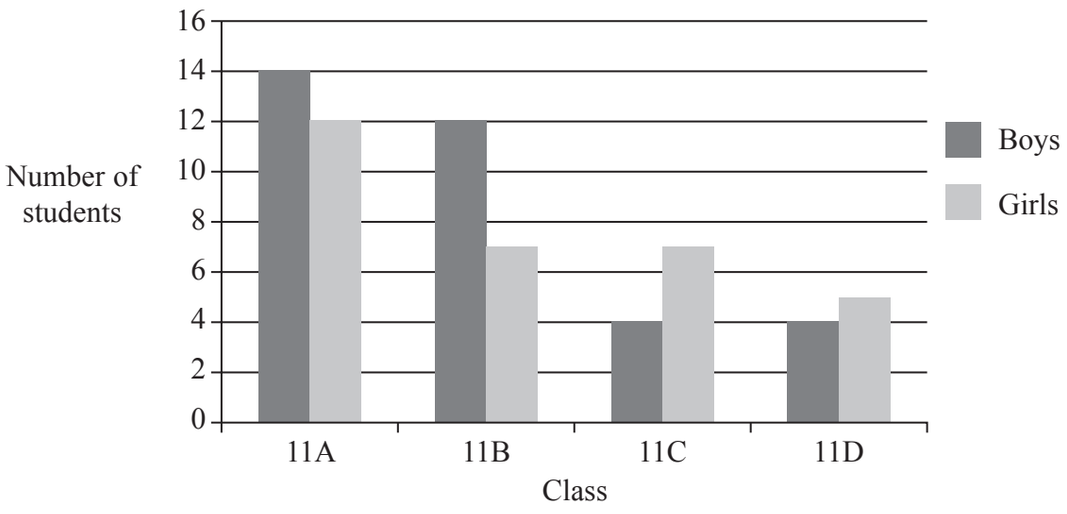
(b) Work out how much change he should get.

$ .....

(2)

(Total for Question 7 is 5 marks)

8 The bar chart gives information about the numbers of students in the 4 classes of Year 11 in a school.



(a) Write down the number of boys in class 11A.

.....

(1)

There are more girls in class 11C than there are girls in class 11D.

(b) How many more?

.....

(1)

(c) Work out the total number of students in Year 11

.....

(2)

(d) Work out what percentage of Year 11 students are in class 11A.

..... %

(2)

(Total for Question 8 is 6 marks)

9 Here is a sequence of patterns made from short sticks and long sticks.

The short sticks make squares and the long sticks are diagonals of the squares.

Pattern number 1

Pattern number 2

Pattern number 3

(a) In the space below, draw Pattern number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Total number of sticks	5	9	13		

(1)

(c) Find the total number of sticks in Pattern number 7

.....

(1)

(d) Work out the number of **short** sticks in Pattern number 12

.....

(1)

This square has a **down** diagonal

This square has an **up** diagonal

(e) How many **up** diagonals are there in Pattern number 21?

.....

(1)

(Total for Question 9 is 5 marks)

10

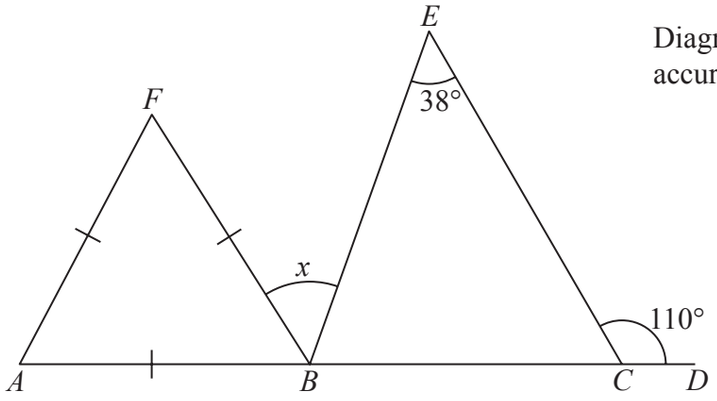


Diagram **NOT** accurately drawn

ABCD is a straight line.
Triangle *ABF* is equilateral.
Angle *ECD* = 110°
Angle *BEC* = 38°

Work out the size of angle *x*.

.....°

(Total for Question 10 is 3 marks)

11 This rule gives the cost, in euros, of hiring a bicycle for a number of days.

Cost in euros = 8 × (number of days) + 15

Marina hires a bicycle for 4 days.

(a) Work out the cost in euros.

..... euros

(2)

Cyril hires a bicycle for a number of days.

The cost is 71 euros.

(b) Work out the number of days.

.....

(2)

(Total for Question 11 is 4 marks)

12 $w = 4x - 5y$

(a) $x = 7, y = 4$

Work out the value of w.

$w =$ .....

(2)

$w = 4x - 5y$

(b) $w = 100, y = 22$

Work out the value of x.

$x =$ .....

(2)

$w = 4x - 5y$

(c) $x = 6t, y = 2t$

Find a formula for w in terms of t.
Give your answer in its simplest form.

$w =$ .....

(2)

(Total for Question 12 is 6 marks)

13 In 2011, the population of Uganda was 34 million.
In 2011, 48% of the population of Uganda had a mobile phone.

(a) Work out how many people did **not** have a mobile phone in Uganda in 2011

.....million
(3)

(b) Write 48% as a fraction.

.....
(1)

(c) Write 48% as a decimal.

.....
(1)

(Total for Question 13 is 5 marks)

14 A ferry leaves Palermo at 7 45 pm and arrives in Salerno at 6 15 am the next day.

(a) Work out how long the ferry takes to go from Palermo to Salerno.

.....

(2)

Speed at sea is measured in knots.

1 knot = 1.852 kilometres per hour.

A ferry takes 12 hours to go from Trapani to Cagliari.

The ferry goes at an average speed of 16 knots.

(b) Work out the distance the ferry goes from Trapani to Cagliari.
Give your answer in kilometres, correct to the nearest kilometre.

..... km

(3)

(Total for Question 14 is 5 marks)

15 The ocean liner Queen Mary 2 is the longest of its type.
It has a length of 345 metres.

A scale model is made of the Queen Mary 2
The scale of the model is 1 : 200

Work out the length of the scale model.
Give your answer in centimetres.

..... cm

(Total for Question 15 is 3 marks)

16 w, x, y and z are 4 integers written in order of size, starting with the smallest.

The mean of w, x, y and z is 13
The sum of w, x and y is 33

(a) Find the value of z.

$z =$ .....

(2)

Given also that the range of w, x, y and z is 10,

(b) work out the median of w, x, y and z.

.....

(2)

(Total for Question 16 is 4 marks)

17 On 1st May 2012, the cost of 5.7 grams of gold was 15 960 rupees.

(a) Work out the cost, in rupees, of 4.6 grams of gold on the same day.

..... rupees

(2)

The cost of gold decreased by 7.5% from 1st May 2012 to 1st May 2013

(b) Work out the cost, in rupees, of 5.7 grams of gold on 1st May 2013

..... rupees

(3)

(Total for Question 17 is 5 marks)

18 A steam engine for pulling trains has wheels of diameter 1.5 metres.

(a) Calculate the circumference of a wheel.
Give your answer correct to 3 significant figures.

..... m

(2)

The steam engine travels 1000 metres along a test track.

(b) Work out the number of complete turns of a wheel.

.....

(2)

(Total for Question 18 is 4 marks)

19 John changes £450 to euros.

The exchange rate is £1 = 1.16 euros.

(a) Change £450 to euros.

..... euros

(2)

When in Amsterdam, John uses his credit card to pay for a ring costing 850 euros.

He has to pay a bank charge of £3.50 for using his credit card in addition to the cost of the ring.

(b) Work out the total cost, in pounds (£), of the ring and the bank charge.

£ .....

(3)

(Total for Question 19 is 5 marks)

20 The pie chart gives information about the amounts spent by a gas company in one year.

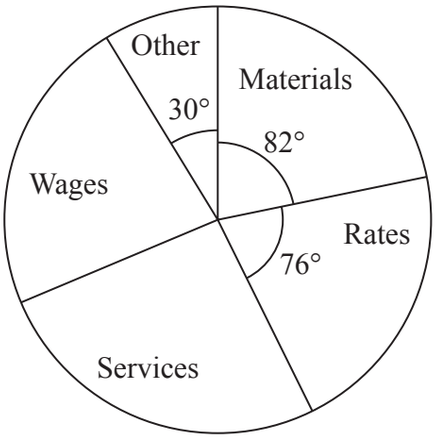


Diagram **NOT** accurately drawn

The amount spent on materials was 225.5 million euros.
The amount spent on services was the same as the amount spent on wages.

Work out the amount spent on services.

..... million euros

(Total for Question 20 is 3 marks)

21 (a) Simplify $k^6 \times k^3$

.....

(1)

(b) Simplify $5y \times 4y^2$

.....

(2)

(Total for Question 21 is 3 marks)

22 Here is a right-angled triangle.

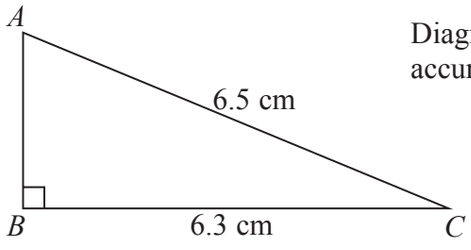


Diagram **NOT** accurately drawn

$AC = 6.5$ cm.
$BC = 6.3$ cm.
Angle $ABC = 90°$

Calculate the length of AB.

..... cm

(Total for Question 22 is 3 marks)

23 Here is a prism.

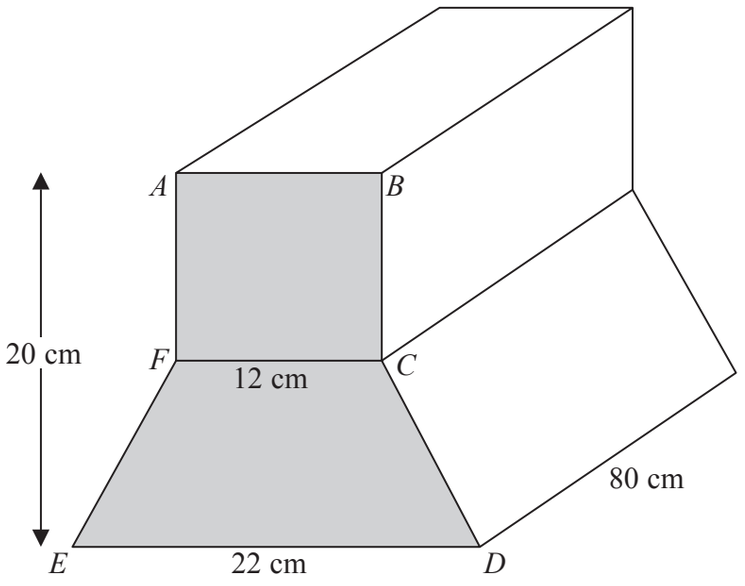


Diagram **NOT** accurately drawn

ABCDEF is a cross section of the prism.

ABCF is a square of side 12 cm.
FCDE is a trapezium.
ED = 22 cm.

The height of the prism is 20 cm.
The length of the prism is 80 cm.

Work out the total volume of the prism.

..... cm^3

(Total for Question 23 is 5 marks)

24 There are 32 students in Mr Newton's class.
20 are boys and 12 are girls.

The mean height of the boys is 151 cm.
The mean height of the girls is 148 cm.

Calculate the mean height of all the students in Mr Newton's class.

..... cm

(Total for Question 24 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS

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