Write your name here

Surname	Other names

Pearson Edexcel Certificate
Pearson Edexcel
International GCSE

Centre Number | | | | | |

Candidate Number | | | | |

Mathematics A

Paper 2F

Foundation Tier

Tuesday 20 May 2014 – Afternoon
Time: 2 hours

Paper Reference
4MA0/2F
KMA0/2F

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 ▶

P43027A

1/1/1/1/

P 4 3 0 2 7 A 0 1 2 4

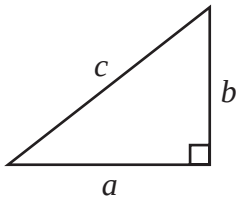
PEARSON

International GCSE MATHEMATICS

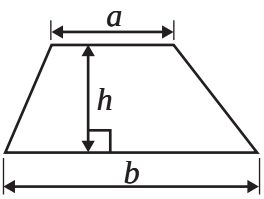
FORMULAE SHEET – FOUNDATION TIER

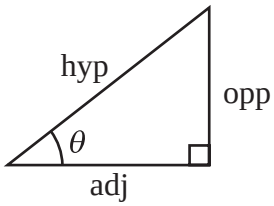
Pythagoras' Theorem

$a^2 + b^2 = c^2$



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





adj = hyp × cos θ

opp = hyp × sin θ

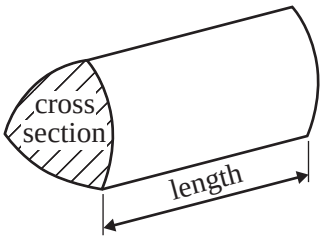
opp = adj × tan θ

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

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

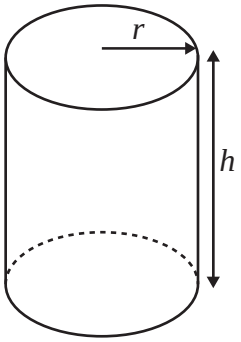
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



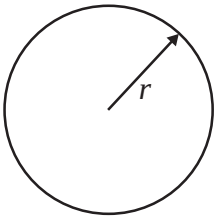
Circumference of circle = $2\pi r$

Area of circle = πr^2



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

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



Answer ALL TWENTY FIVE questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

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

7645 7512 7683 7365

.....

(1)

(b) Write these decimals in order of size.
Start with the smallest decimal.

0.53 0.3 0.035 0.05

.....

(1)

(c) Here are four cards.
Each card has a number on it.

5	8	1	4

These four cards are arranged to make the number 5814
The four cards can be rearranged to make other numbers.

(i) Write down the largest number that can be made.

.....

(ii) Write down the smallest **odd** number that can be made using all four cards.

.....

(2)

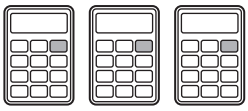
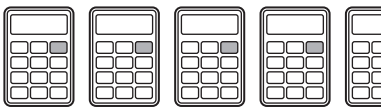
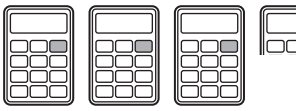
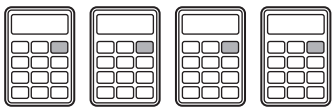
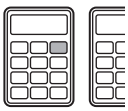
(d) Write down a multiple of 6 that is between 40 and 50

.....

(1)

(Total for Question 1 is 5 marks)

2 The pictogram shows information about the number of calculators sold each day from Monday to Friday in a shop.

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	

 represents 4 calculators

(a) How many calculators were sold on Monday?

.....

(1)

(b) How many more calculators were sold on Wednesday than were sold on Friday?

.....

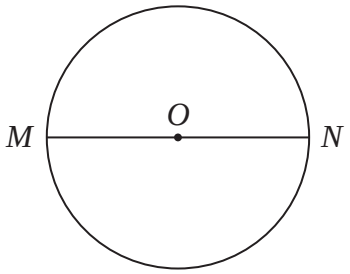
(2)

(c) 15 calculators were sold on Saturday in the shop.
Show this information on the pictogram.

(1)

(Total for Question 2 is 4 marks)

3 *M* and *N* are points on a circle, centre *O*.



(a) Write down the mathematical name for the straight line *MN*.

.....

(1)

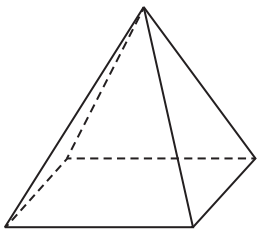
(b) Measure the length of line *AB*.
State the units of your answer.

.....

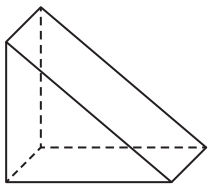
(2)

(c) Write down the mathematical name for each of these 3-D shapes.

(i)



(ii)



....

(2)

(d) (i) How many edges has the shape in (c)(i)?

.....

(ii) How many faces has the shape in (c)(ii)?

.....

(2)

(Total for Question 3 is 7 marks)

4 Sahil buys

one book costing $6.99
two magazines costing $3.50 **each**
one newspaper costing $1.20

Sahil pays with a $20 note.
Work out how much change Sahil should get.

$ .....

(Total for Question 4 is 3 marks)

5 (a) Complete the following sentences by writing a sensible metric unit on each of the dotted lines.

(i) The length of a pencil is 9 .....

(ii) The weight of a man is 85 .....

(iii) The area of the floor of a room is 35 .....

(3)

(b) Change 6 kilometres into metres.

..... metres

(1)

(c) Change 35 000 cm^3 into litres.

..... litres

(1)

(Total for Question 5 is 5 marks)

6 (a) Simplify

(i) $m + m + m + m + m$

.....

(ii) $p \times h \times 7$

.....

(2)

(b) Solve $8g = 24$

$g =$ .....

(1)

(c) Solve $f + 9 = 23$

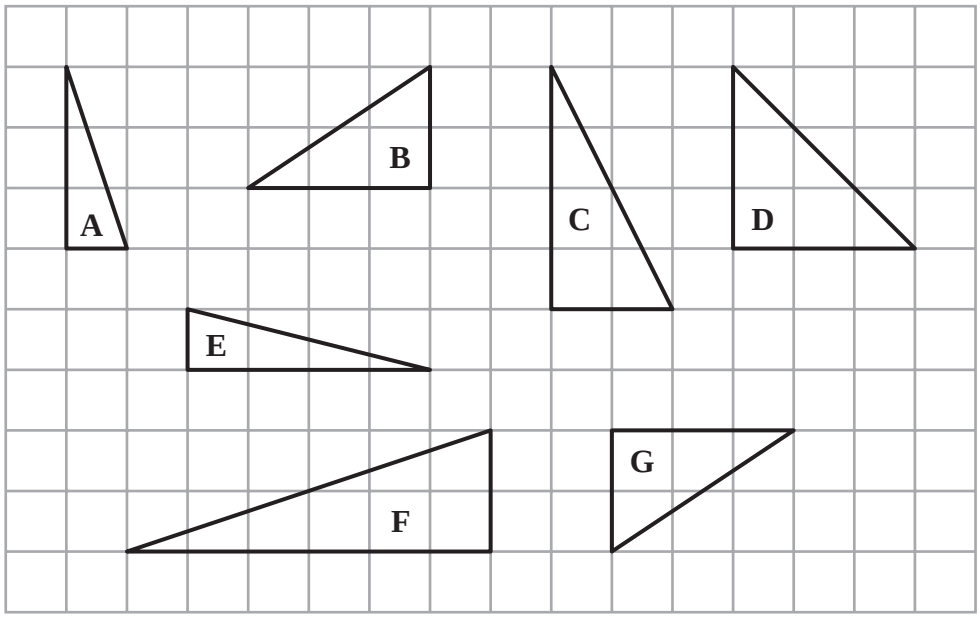
$f =$ .....

(1)

(Total for Question 6 is 4 marks)

Do NOT write in this space.

7 Here are seven triangles drawn on a square grid.



(a) Write down the letters of the two triangles that are congruent.

..... , ...

(1)

(b) One of the triangles is similar to triangle **A**.
Write down the letter of this triangle.

.....

(1)

(c) One of the triangles is isosceles.
Write down the letter of this triangle.

.....

(1)

(Total for Question 7 is 3 marks)

Do NOT write in this space.

8 $w = 2a + b$

(a) Work out the value of w when $a = 5$ and $b = 4$

$w =$ .....

(2)

(b) Work out the value of a when $w = 28$ and $b = 3$

$a =$ .....

(3)

(Total for Question 8 is 5 marks)

Do NOT write in this space.

9 (a) Write 0.04 as a percentage.

..... %

(1)

(b) Work out $\frac{3}{7}$ of 224

.....

(2)

(c) Find the cube root of 2744

.....

(1)

(d) Find the value of 4^5

.....

(1)

(Total for Question 9 is 5 marks)

Do NOT write in this space.

10 Paul buys 5 boxes of oranges for a total cost of £36
There are 24 oranges in each box.
Paul sells $\frac{1}{2}$ of the oranges for £0.40 each.
He sells the rest of the oranges at £1 for 3 oranges.

How much profit does Paul make?

£ .....

(Total for Question 10 is 4 marks)

Do NOT write in this space.

11 The table gives information about the numbers of medals won by Australia and Great Britain in the 2012 Paralympic Games.

	Australia	**Great Britain**
Gold medals	32	34
Silver medals	23	43
Bronze medals	30	43
Total	85	120

(a) What fraction of the total number of medals won by Australia were gold medals?

.....

(1)

(b) Write down the ratio of the total number of medals won by Australia to the total number of medals won by Great Britain.
Give your ratio in its simplest form.

.....

(2)

(c) In the 2012 Paralympic Games, the total number of gold and silver medals won by Brazil was 35
The ratio of the number of gold medals that Brazil won to the number of silver medals that Brazil won was 3 : 2

How many silver medals were won by Brazil?

.....

(2)

(d) In the 2012 Paralympic Games, the ratio of the total number of medals won by the Ukraine to the total number of medals won by Great Britain was 7 : 10

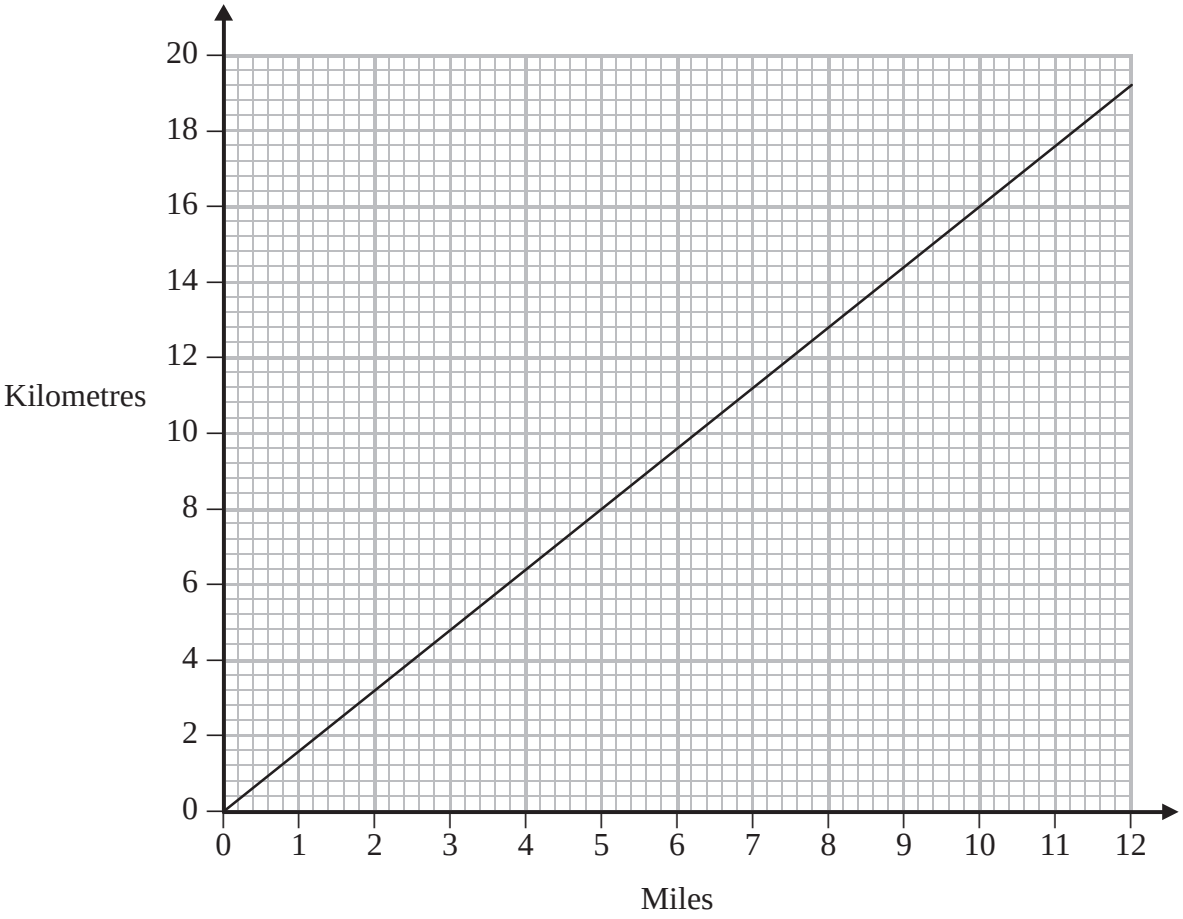
Great Britain won a total of 120 medals.
What was the total number of medals won by the Ukraine?

.....

(2)

(Total for Question 11 is 7 marks)

12 You can use this graph to convert between miles and kilometres.



(a) Use the graph to convert

(i) 10 miles to kilometres

..... kilometres

(ii) 12 kilometres to miles

..... miles

(2)

(b) Convert 80 kilometres to miles

..... miles

(2)

(Total for Question 12 is 4 marks)

13 There are 20 counters in a bag.
3 of the counters are red.
8 of the counters are blue.
The rest of the counters are yellow.

Zakir takes at random a counter from the bag.

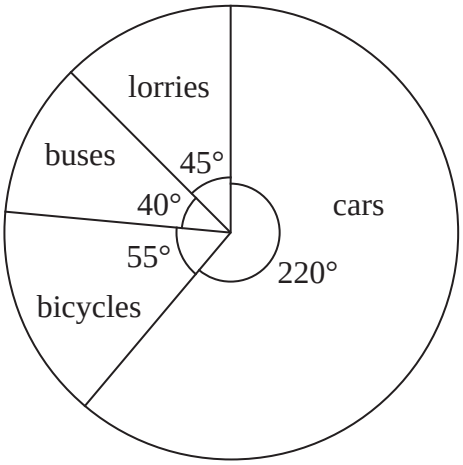
Work out the probability that Zakir takes a yellow counter.

.....

(Total for Question 13 is 2 marks)

Do NOT write in this space.

14 The pie chart shows information about the types of vehicles that went past a school, in one hour, on Monday morning.



(a) 16 buses went past the school.
Work out the number of bicycles that went past the school.

.....

(2)

(b) The table shows the numbers of vehicles that went past the school, in one hour, on Tuesday morning.

Vehicles	Frequency
Cars	41
Bicycles	15
Buses	7
Lorries	9
Total	72

A pie chart is to be drawn to show this information.
Work out the size of the angle in the pie chart for the 9 lorries.

..... °

(2)

(Total for Question 14 is 4 marks)

15 The diagram shows a quadrilateral.

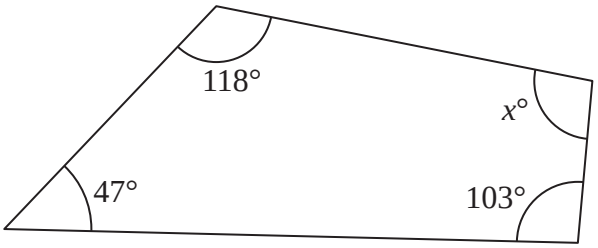


Diagram **NOT** accurately drawn

Work out the value of x.

$x =$ .....

(Total for Question 15 is 2 marks)

16

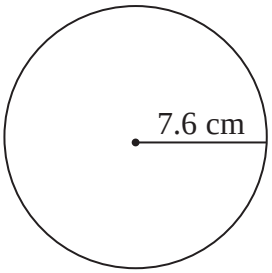


Diagram **NOT** accurately drawn

(a) A circle has a radius of 7.6 cm.
Work out the area of the circle.
Give your answer correct to 3 significant figures.

..... cm^2

(2)

The radius, 7.6 cm, is correct to 1 decimal place.

(b) (i) Write down the upper bound of the radius.

..... cm

(ii) Write down the lower bound of the radius.

..... cm

(2)

(Total for Question 16 is 4 marks)

17 In a sale, all normal prices are reduced by 15%.

(a) The normal price of a washing machine is 270 dollars.
Work out the sale price of the washing machine.

..... dollars
(3)

(b) The normal price of a food processor is reduced by 13.50 dollars.
Work out the normal price of the food processor.

..... dollars
(3)

(Total for Question 17 is 6 marks)

18 Sarah has a biased 4-sided spinner.
The spinner can land on 1, 2, 3 or 4

The probability that the spinner will land on 1, 2 or 4 is given in the table.

Number	1	2	3	4
Probability	0.4	0.35		0.1

Work out the probability that the spinner will land on 3

.....

(Total for Question 18 is 2 marks)

19 Work out the size of each exterior angle of a regular polygon with 15 sides.

.....°

(Total for Question 19 is 2 marks)

20 Jalin lives in England.
He does a search on the internet and sees the same type of camera on sale in France and in America.

In France, the camera costs 126 euros.
In America, the camera costs $165.24

Jalin finds out these exchange rates.

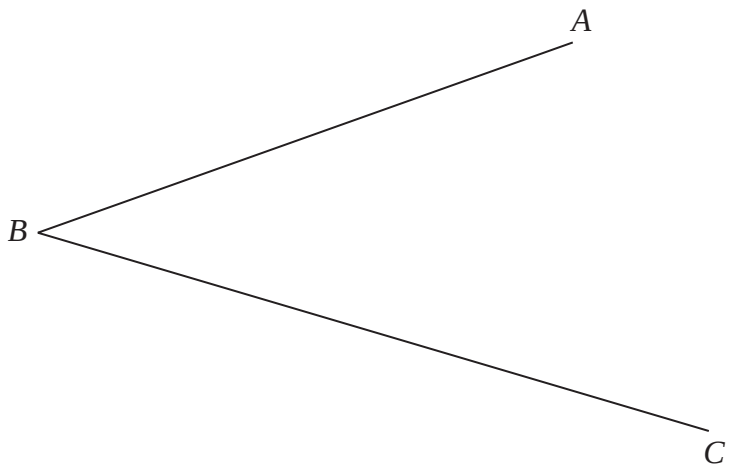
Exchange rates
1 euro = £0.89
£1 = $1.62

How much cheaper is the camera in America than in France?
Give your answer in pounds (£).

£ .....

(Total for Question 20 is 4 marks)

21 Use ruler and compasses to construct the bisector of angle *ABC*.
You must show all your construction lines.



(Total for Question 21 is 2 marks)

22

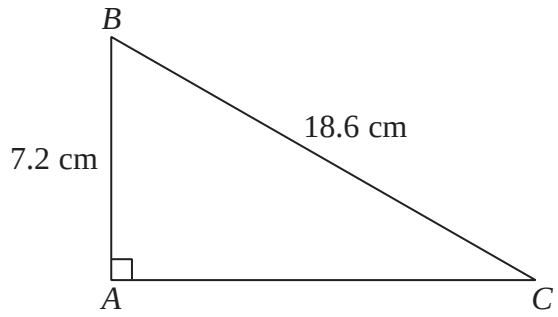


Diagram **NOT** accurately drawn

Calculate the length of *AC*.
Give your answer correct to 3 significant figures.

..... cm

(Total for Question 22 is 3 marks)

23 (a) Solve $7x - 6 = 2x + 17$
Show clear algebraic working.

$x =$ .....

(3)

(b) Expand and simplify fully $(x + 8)(x + 2)$

.....

(2)

(Total for Question 23 is 5 marks)

24 The table shows information about the times, in minutes, taken by 50 people to get to work.

Time taken (t minutes)	**Frequency**
$0 < t \leqslant 10$	6
$10 < t \leqslant 20$	10
$20 < t \leqslant 30$	19
$30 < t \leqslant 40$	15

Work out an estimate for the mean time taken to get to work.

..... minutes

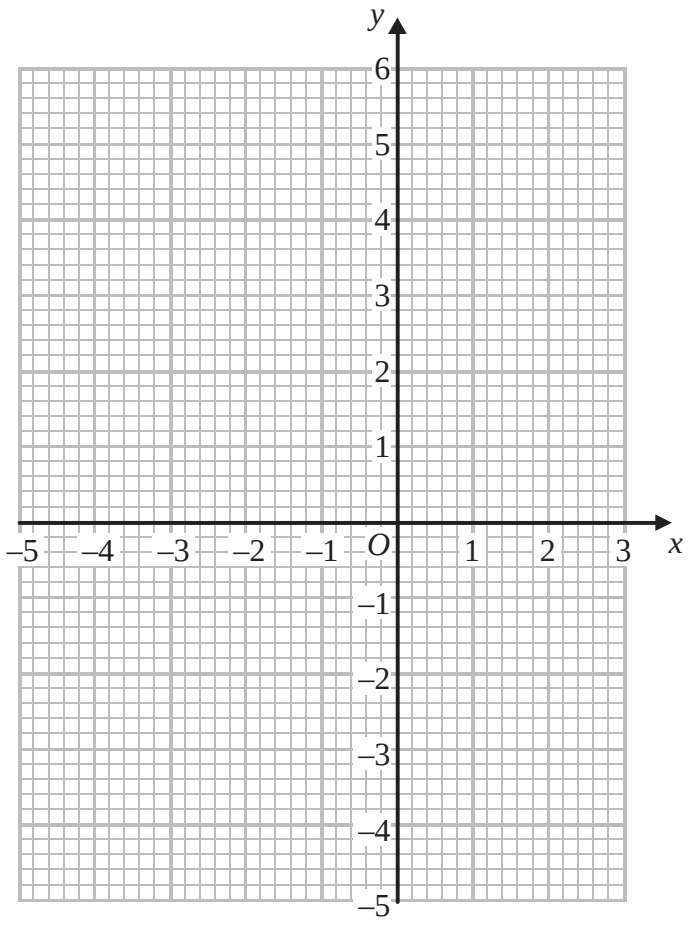
(Total for Question 24 is 4 marks)

25 (a) Complete the table of values for $y = x^2 + 2x - 3$

x	−4	−3	−2	−1	0	1	2
y		0	−3	−4			5

(2)

(b) On the grid, draw the graph of $y = x^2 + 2x - 3$ for values of x from −4 to 2



(2)

(Total for Question 25 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

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