Write your name here

Surname		Other names

Edexcel Certificate

Edexcel International GCSE

Centre Number

Candidate Number

Mathematics A
Paper 1F

Foundation Tier

Friday 11 May 2012 – Afternoon
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.
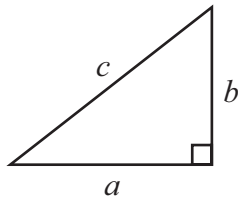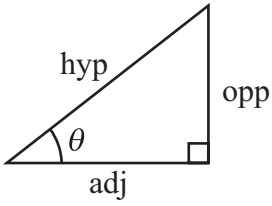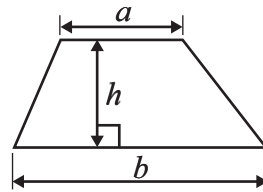- Check your answers if you have time at the end.

Turn over ▶

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PEARSON

FORMULAE SHEET – FOUNDATION TIER

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

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

adj = hyp $\times$ cos θ
opp = hyp $\times$ sin θ
opp = adj $\times$ tan θ

Volume of prism = area of cross section $\times$ length
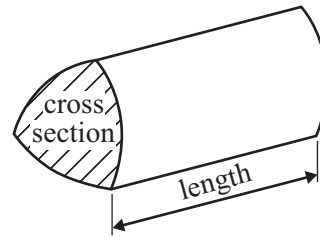
or $\sin\theta = \dfrac{\text{opp}}{\text{hyp}}$

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

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

Circumference of circle $= 2\pi r$

Area of circle $= \pi r^2$

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

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

2

Answer ALL NINETEEN questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 The table shows the number of competitors in the Olympic Games held in each of 6 cities.
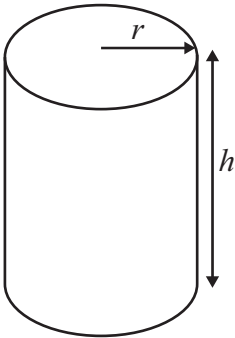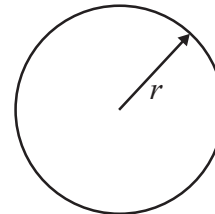
City	Number of competitors
Munich	7123
Montreal	6028
Moscow	5217
Los Angeles	6797
Seoul	8465
Barcelona	9367

(a) Which number in the table is the largest?

....

(1)

(b) Write down the value of the 2 in the number 5217

....

(1)

(c) Write the number 8465 correct to the nearest thousand.

....

(1)

(d) Which number in the table is a multiple of 4?

....

(1)

(e) Use a number from the table to make this calculation correct.

.... $\div\ 3\ =\ 1739$

(1)

(Total for Question 1 is 5 marks)

2 The bar chart shows information about the number of people in the world who had swine flu on each of the first 5 days of May 2009.
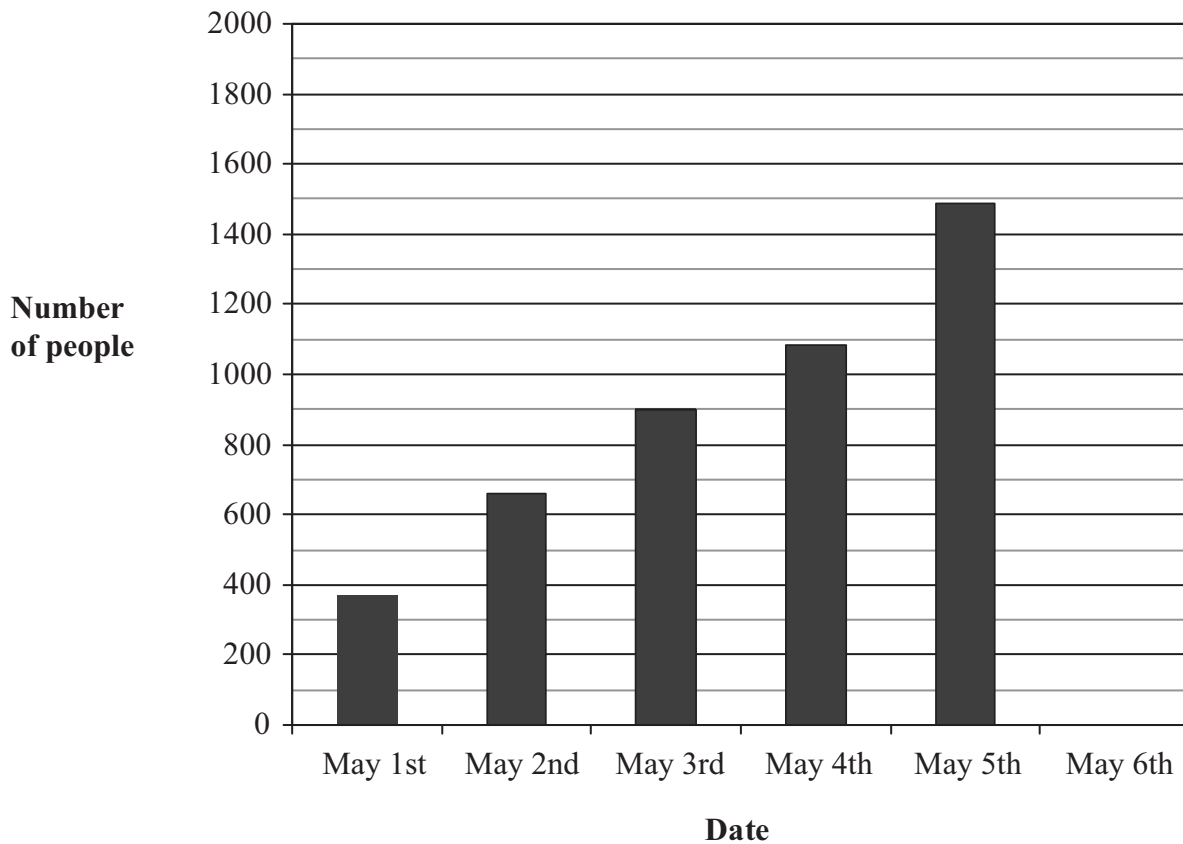
Date

(a) How many people had swine flu on May 3rd?

....

(1)

(b) On which date did 658 people have swine flu?

....

(1)

(c) On May 6th, 1893 people had swine flu.
Draw a bar on the bar chart to show this information.

(1)

On May 9th, 3440 people had swine flu.

(d) 7% of these 3440 people were in Canada.

Work out 7% of 3440

....

(2)

(e) 1639 of these 3440 people were in the USA.

Express 1639 as a percentage of 3440
Give your answer correct to 1 decimal place.

.... %

(2)

(Total for Question 2 is 7 marks)

Do NOT write in this space.

3
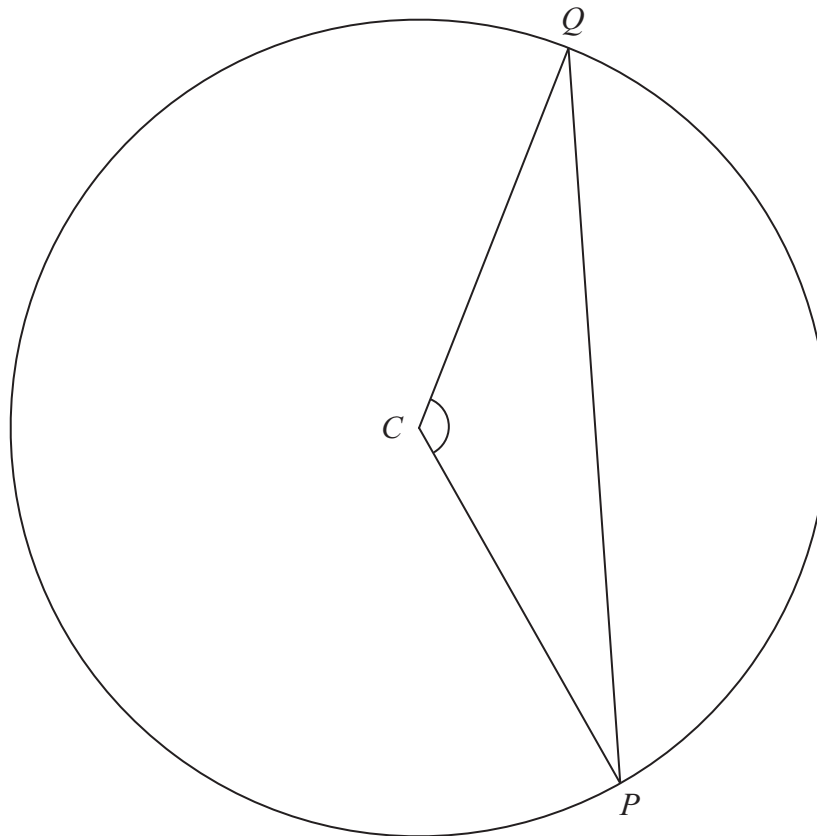
P and Q are points on a circle, centre C.

(a) Write down the mathematical name for the line CP.

....
(1)

(b) Measure the length of the line CP.

.... cm
(1)

(c) (i)   Measure the size of angle C.

°
....

    (ii)   Write down the mathematical name for this type of angle.

....
(2)

(d) On the diagram, draw the line of symmetry of triangle CPQ.

(1)

(e) Write down the mathematical name for triangle CPQ.

....
(1)

(Total for Question 3 is 6 marks)

4 (a) Work out the number which is exactly halfway between 0.3 and 0.6

....

(1)

(b)

2.3   2.4
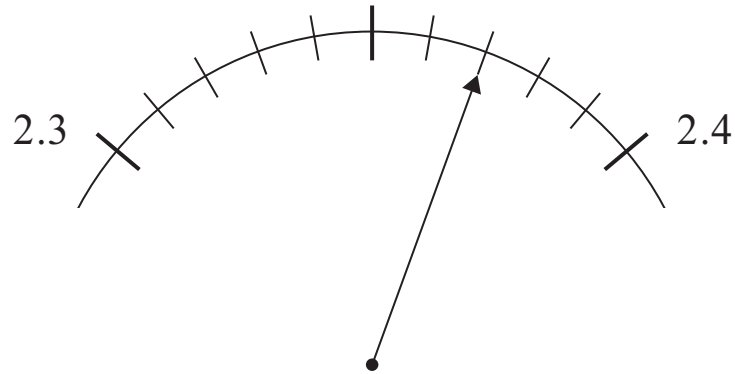
What is the reading on the scale?

....

(1)

(c) Write down the value of the 3 in the number 0.243

....

(1)

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

0.18   0.08   0.2   0.06   0.1

....

(2)

(Total for Question 4 is 5 marks)

Do NOT write in this space.

Turn over ▶

5 Here is some information from a weather forecast website for Chicago for one day in January.

Probability of snow	85%
Maximum temperature	−2°C
Minimum temperature	−9°C
Sunrise	7 05 am
Sunset	5 02 pm

(a) Write 85% as a decimal.

....
(1)

(b) Write 85% as a fraction.
Give your fraction in its simplest form.

....
(2)

(c) How many degrees higher is the maximum temperature than the minimum temperature?

....°C
(2)

(d) Write 5 02 pm as a time using the 24-hour clock.

....
(1)

(e) Work out the length of time between 7 05 am and 5 02 pm.
Give your answer in hours and minutes.

.... hours .... minutes

(3)

(f) The probability that it will snow is 85%.
Work out the probability that it will **not** snow.

.... %

(1)

(Total for Question 5 is 10 marks)

6 Here are the first five terms of a number sequence.

36   33   30   27   24

(a) Find the next two terms of the sequence.

.... , ...

(2)

(b) Explain how you found your terms.

....

(1)

(c) Find the 13th term of the sequence.

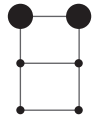..
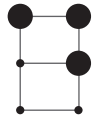
(1)

(Total for Question 6 is 4 marks)

7 Braille is a system of writing for blind people.
A rectangular pattern of 6 dots represents each letter of the alphabet.
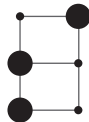Some of the dots are large and some are small.

Here are the patterns for 6 letters.
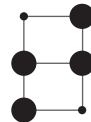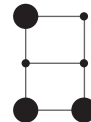
    C   D   S   T   U   X

(a) How many lines of symmetry has the pattern for D?

....
(1)

(b) Write down the letter whose pattern has

    (i)   rotational symmetry of order 2 and 2 lines of symmetry,

....

    (ii) rotational symmetry of order 2 but no lines of symmetry.

....
(2)

(c) On the grid below, use 2 large dots and 4 small dots to make a pattern which
has rotational symmetry of order 2 but no lines of symmetry.

(1)

(Total for Question 7 is 4 marks)

Do NOT write in this space.

8 This formula can be used to work out the cost, in Riyals, of hiring a car in Qatar for a number of days.

> Cost = 85 × number of days

(a) Daisha hired a car for 12 days.
   Work out the cost.

.... Riyals

(1)

(b) Yusuf hired a car.
   The cost was 765 Riyals.
   Work out the number of days for which Yusuf hired the car.

....

(2)

(c) *C* Riyals is the cost of hiring a car for *n* days.
   Write down a formula for *C* in terms of *n*.

....

(2)

(d) As a special offer, the cost of hiring a car for a month is 1800 Riyals.
   Awad wants to hire a car for a number of days.
   He works out that 1800 Riyals is less than the cost of hiring the car at
   85 Riyals for each day.

   Work out the smallest number of days for which Awad wants to hire a car.

....

(2)

(Total for Question 8 is 7 marks)

Turn over ▶

9 The table shows information about the number of peas in each of 25 pods.

Number of peas	1	2	3	4	5	6
Number of pods	3	6	5	8	2	1

(a) Find the mode of the number of peas.

....

(1)

(b) Work out the range of the number of peas.

....

(2)

(c) Work out the mean number of peas in the 25 pods.

....

(3)

(d) Tariq puts the 25 pods in a bag.
He takes at random one of the pods.

Find the probability that he takes

(i) a pod with 7 peas,

....

(ii) a pod with 5 peas,

....

(iii) a pod with 3 peas or a pod with 4 peas.

....
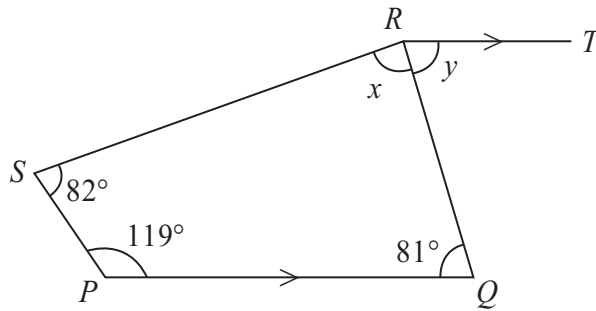
(5)

(Total for Question 9 is 11 marks)

10

Diagram **NOT**
accurately drawn

The diagram shows a quadrilateral *PQRS* and a straight line *RT*.
PQ is parallel to *RT*.

(a) Work out the size of angle *x*.

.... °

(2)

(b) (i)   Find the size of angle *y*.

.... °

(ii) Give a reason for your answer.

....

....

(2)

(Total for Question 10 is 4 marks)

Do NOT write in this space.

11

1 euro = 1.45 US dollars

(a) Change 320 euros to US dollars.

.... US dollars

(2)

(b) Change 841 US dollars to euros.

.... euros

(2)

(Total for Question 11 is 4 marks)

12 (a) Solve $2x + 9 = 1$

$x =$ ....

(2)

(b) Solve $3(2y - 1) = 6$
Show clear algebraic working.

$y =$ ....

(3)

(Total for Question 12 is 5 marks)

13 (a) The length of an Airbus A300 aeroplane is 54 m.
The ratio of the length of this aeroplane to its wingspan is 6 : 5

Work out the wingspan of the aeroplane.

.... m

(2)

(b) A model is made of the Airbus A300 aeroplane.
The length of the model is 36 cm.
The length of the real aeroplane is 54 m.

Find the ratio of the length of the model to the length of the real aeroplane.
Give your ratio in the form 1 : n

1 : ....

(3)

(Total for Question 13 is 5 marks)

Do NOT write in this space.

14 $$A = 2x^2 + kx$$

(a) $x = -3$
$k = 4$

Work out the value of A.

$$A = \text{...}$$
(2)

(b) $A = 38$
$x = 4$

Work out the value of k.

$$k = \text{...}$$
(3)

(Total for Question 14 is 5 marks)

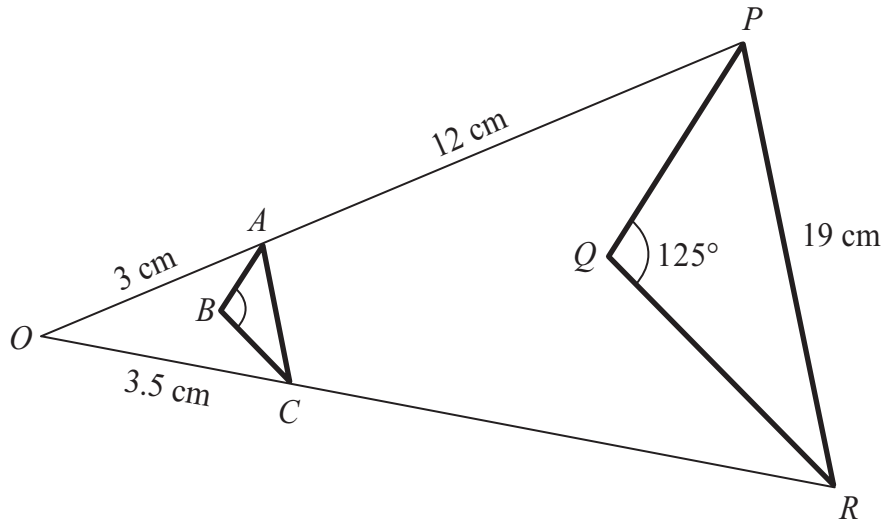**Do NOT write in this space.**

15

Diagram **NOT** accurately drawn

Triangle *PQR* is an enlargement, centre *O*, of triangle *ABC*.
OAP and *OCR* are straight lines.
OA = 3 cm.
AP = 12 cm.
OC = 3.5 cm.
PR = 19 cm.
Angle *Q* = 125°

(a) Find the size of angle *B*.

.... °

(1)

(b) Work out the length of *CR*.

.... cm

(2)

(c) Work out the length of *AC*.

.... cm

(3)

(Total for Question 15 is 6 marks)

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16 (a) Write $2^3 \times 2^6$ as a single power of 2

....
(1)

(b) Write $\dfrac{3^9}{3^4}$ as a single power of 3

....
(1)

(c) $\dfrac{5^n}{5^4 \times 5^6} = 5^3$

Find the value of n.

$n =$ ....
(2)

(Total for Question 16 is 4 marks)

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17

3.7 cm x cm

5.6 cm
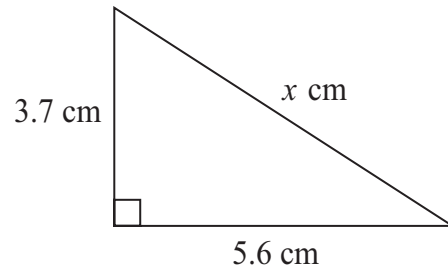
Diagram **NOT**
accurately drawn

Work out the value of x.
Give your answer correct to 3 significant figures.

$x = $ ....

(Total for Question 17 is 3 marks)

18 Three positive whole numbers have a mean of 4 and a range of 7

Find the three positive whole numbers.

....

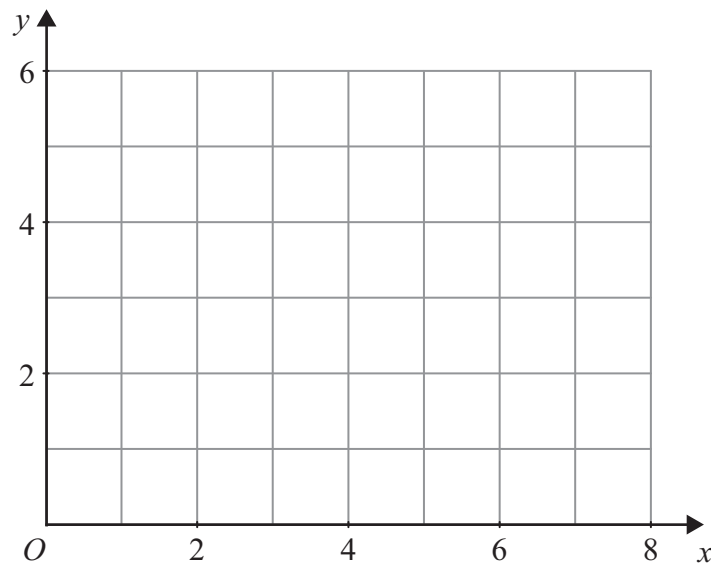**(Total for Question 18 is 2 marks)**

19 Show, by shading on the grid, the region defined by all three of the inequalities

$x \leqslant 5$

$y \geqslant 3$

$y \leqslant x$

Label your region **R**.

(Total for Question 19 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS

Do NOT write in this space.