Write your name here

Surname		Other names

Pearson Edexcel
International GCSE

Centre Number

Candidate Number

Mathematics A
Paper 1FR

Foundation Tier

Friday 10 January 2014 – Morning
Time: 2 hours

Paper Reference
4MA0/1FR

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.
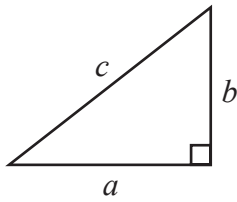- Check your answers if you have time at the end.

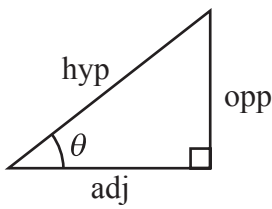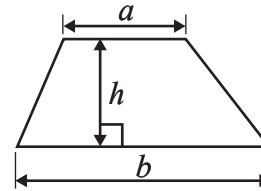Turn over ▶

P42952A0120

PEARSON

International GCSE MATHEMATICS

FORMULAE SHEET – FOUNDATION TIER

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

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

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

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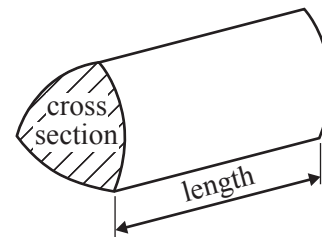
or $\quad \sin\theta = \dfrac{opp}{hyp}$

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

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

Circumference of circle = $2\pi r$

Area of circle = πr^2
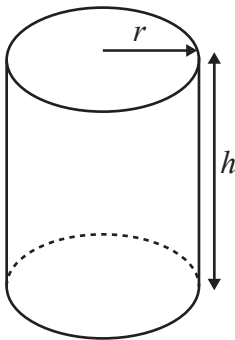
Volume of cylinder = $\pi r^2 h$

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

P 4 2 9 5 2 A 0 2 2 0

Answer ALL TWENTY ONE questions.

Write your answers in the spaces provided.

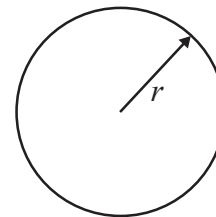**You must write down all stages in your working.**

1 The table shows the distance from Delhi to each of six cities.

City	Distance (km)
Bengaluru	2061
Chennai	2095
Hyderabad	1499
Kolkata	1461
Mumbai	1407
Pune	1417

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

....
(1)

(b) Write the number 2061 in words.

....
(1)

(c) Write down the value of the 6 in the number 1461

....
(1)

(d) Write the number 1499 correct to the nearest thousand.

....
(1)

(e) Which number in the table is a multiple of 7?

....
(1)

(Total for Question 1 is 5 marks)

2 Here are nine shapes on a grid of centimetre squares.
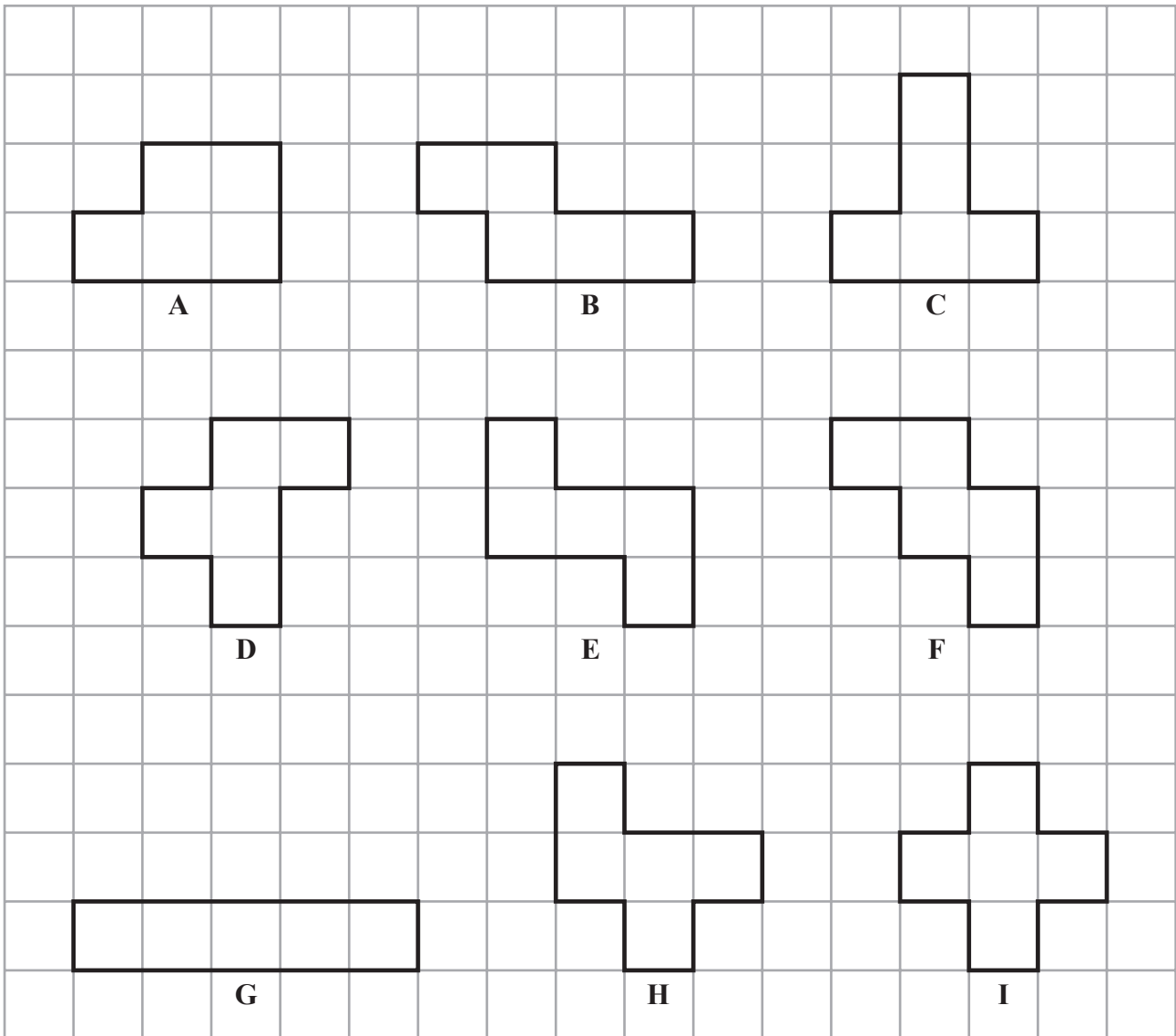
(a) Shape **A** is a 6-sided polygon.

Write down the mathematical name for a 6-sided polygon.

....

(1)

(b) Find the area of shape **B**.

.... cm²

(1)

(c) Find the perimeter of shape **C**.

.... cm
(1)

(d) Two of the shapes each have exactly 1 line of symmetry.

Write down the letters of these two shapes.

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

(e) On shape **I**, draw all its lines of symmetry.

(2)

(f) Write down the letter of the shape which has

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

....

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

....
(2)

(g) Two of the shapes are congruent.

Write down the letters of these two shapes.

.... and ....
(1)

(h) Explain why shape **I** is **not** a regular polygon.

....
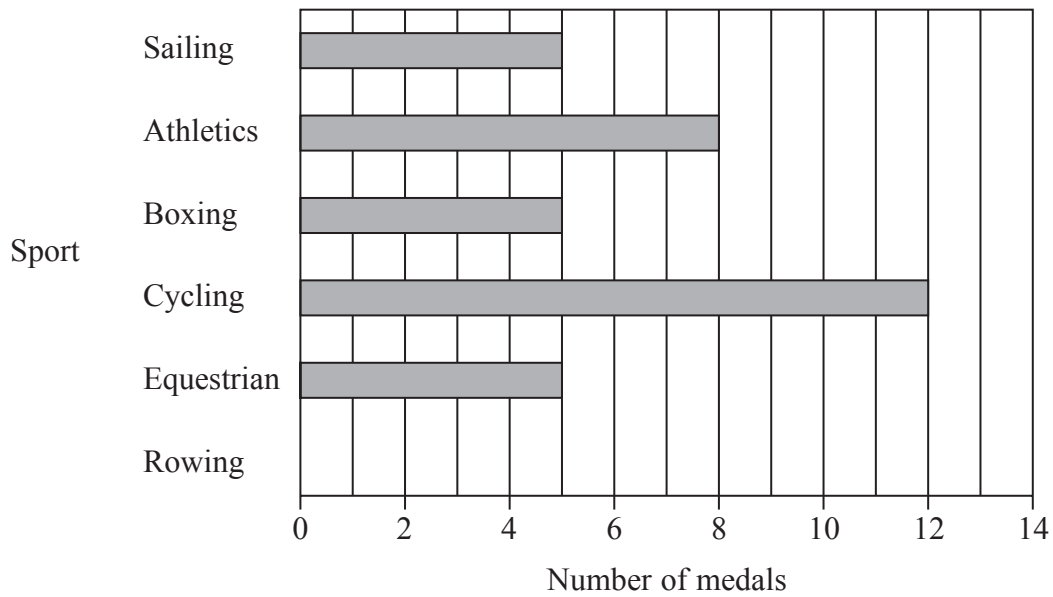**(1)**

(Total for Question 2 is 11 marks)

Do NOT write in this space.

3 The bar chart shows the number of medals won by Team GB in each of five sports at the 2012 Olympic Games.

(a) Find the number of Sailing medals won by Team GB.

....

(1)

(b) In which of the five sports were 8 medals won by Team GB?

....

(1)

(c) Team GB won 9 Rowing medals.

Draw a bar on the bar chart to show this information.

(1)

(d) $\frac{2}{3}$ of the 12 Cycling medals won by Team GB were gold medals.

Work out $\frac{2}{3}$ of 12

....

(2)

(Total for Question 3 is 5 marks)

P 4 2 9 5 2 A 0 6 2 0

4 This rule can be used to work out the shortest distance from the screen a viewer should sit to watch TV.

> Multiply the width of the screen by 3

(a) Tola is going to watch his TV.
The width of the screen is 55 cm.

Work out the shortest distance from the screen he should sit.

.... cm

(1)

(b) Roseva is going to watch her TV.
The shortest distance from the screen she should sit is 219 cm.

Work out the width of the screen.

.... cm

(2)

(c) The width of a TV screen is *w* cm.
The shortest distance from the screen a viewer should sit to watch this TV is *d* cm.

Write down a formula for *d* in terms of *w*.

....

(2)

(Total for Question 4 is 5 marks)

Do NOT write in this space.

5 (a) Write $\frac{4}{5}$ as a decimal number.

....
(1)

(b) Write 5.27 to the nearest whole number.

....
(1)

(c) Find the number to make this calculation correct.

.... $\times$ 3.2 = 18.24

(1)

(Total for Question 5 is 3 marks)

6 (a) Find the next two terms of this number sequence.

     17   21   25   29   33   37   ....

(2)

(b) Explain how you found your terms.

....
(1)

(c) The 1st term, 17, and the 6th term, 37, of the number sequence both end with the number 7

What number does the 32nd term of the sequence end with?

....
(1)

(Total for Question 6 is 4 marks)

Do NOT write in this space.

8

7 The table shows the percentage of the population of Egypt that is in each blood group.

Blood group	Percentage of population
O	33%
A	36%
B	24%
AB	7%

(a) Write 36% as a fraction.
Give your fraction in its simplest form.

....
(2)

(b) Write 7% as a decimal.

....
(1)

(c) The population of Egypt is 83 million.

Work out 24% of 83 million.
Give your answer correct to the nearest million.

.... million
(2)

(Total for Question 7 is 5 marks)

8 Simplify $5c + 6d - 3c - 5d$

....

(Total for Question 8 is 2 marks)

9 The table shows information about the number of goals scored in each of the 25 matches in a hockey tournament.

Number of goals	Number of matches
1	6
2	8
3	7
4	3
5	1

(a) Work out the range of the number of goals.

....

(2)

(b) Work out the median number of goals.

....

(2)

(c) Work out the mean number of goals.

....

(3)

(Total for Question 9 is 7 marks)

10 Write these fractions in order of size.
Start with the smallest fraction.

$$\frac{9}{25} \qquad \frac{1}{3} \qquad \frac{3}{8} \qquad \frac{7}{20}$$

....

(Total for Question 10 is 2 marks)

11
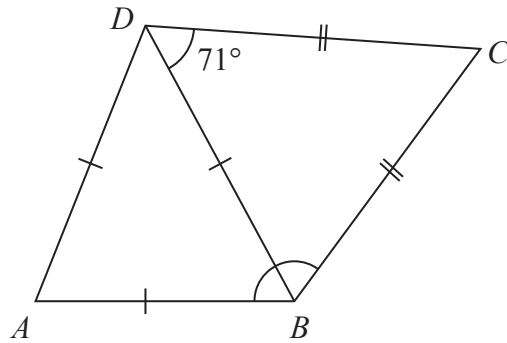

Diagram **NOT** accurately drawn

The diagram shows a quadrilateral *ABCD*.
AB = *BD* = *AD*.
BC = *DC*.
Angle *BDC* = 71°

Work out the size of angle *ABC*.

.... °

(Total for Question 11 is 2 marks)

12 (a) Find the value of $\sqrt{60.84}$

....

(1)

(b) (i) Find the value of 5.1^3
        Write down all the figures on your calculator display.

....

(ii) Write your answer to part (b)(i) correct to 1 decimal place.

....

(2)

(c) Find the cube root of 50.653

....

(1)

(Total for Question 12 is 4 marks)

P 4 2 9 5 2 A 0 1 1 2 0

13 Morse Code uses dots (●) and dashes (▬) to represent each letter of the alphabet.
Here are 10 cards.
Each card has the Morse Code for a letter on it.

| ● ▬ | ▬ ● ● ● | ▬ ● ▬ ● | ▬ ● ● | ● ● ▬ ● |

| ▬ ▬ ● | ● ● | ▬ ● ▬ | ▬ ▬ | ● ▬ ▬ ● |
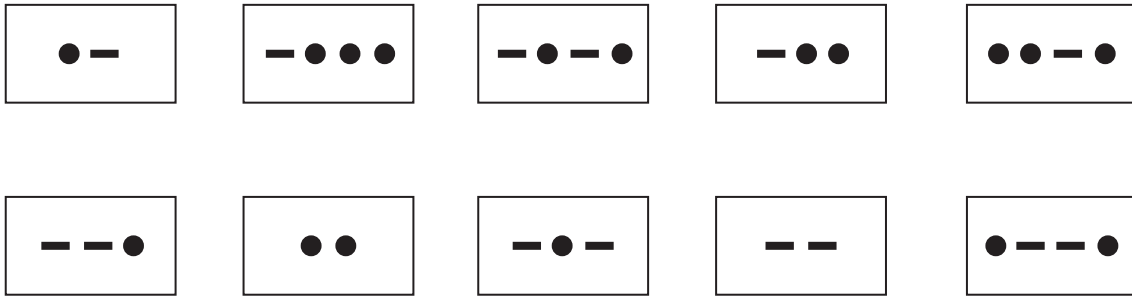
(a) Kelly has the 10 cards.
She takes at random one of the cards.

Find the probability that she takes a card with

(i) 4 dots,

....

(ii) exactly 1 dot,

....

(iii) 2 dots or 3 dots.

....

(5)

(b) Hashim has the 10 cards.
He takes at random a card 200 times.
He replaces the card each time.

Work out an estimate for the number of times he will take a card with exactly 2 dots.

....

(2)

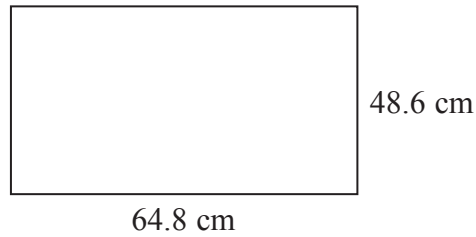**(Total for Question 13 is 7 marks)**

14

Diagram **NOT**
accurately drawn

48.6 cm

64.8 cm

A TV screen is rectangular.
The width of the rectangle is 64.8 cm and the height is 48.6 cm.

(a) Calculate the area of the rectangle.
   Give your answer correct to 3 significant figures.

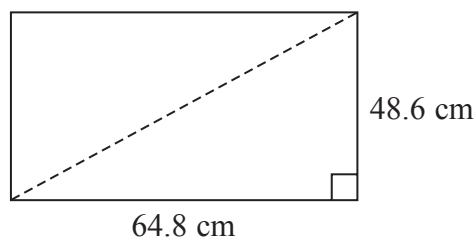.......................... cm²

(3)

Diagram **NOT**
accurately drawn

48.6 cm

64.8 cm

The length of a diagonal of the rectangle gives the 'size' of the TV screen.

(b) Calculate the 'size' of the TV screen.

.... cm

(3)

(Total for Question 14 is 6 marks)

P42952A01320

15 The ratio of Mark's age to Reeta's age is 3 : 5
Mark's age is 24 years.

(a) Work out Reeta's age.

.... years

(2)

The ratio of John's age to Zahra's age is 1 : 4
The sum of their ages is 45 years.

(b) Work out Zahra's age.

.... years

(2)

(Total for Question 15 is 4 marks)

16 (a) Factorise $t^2 + 6t$

....

(2)

(b) Solve $7x - 5 = 5x - 4$
Show clear algebraic working.

$x = $ ....

(3)

(c) Expand and simplify fully $4(2y + 3) + 2(y - 6)$

....

(2)

(Total for Question 16 is 7 marks)

17

Q

7.2 cm

B

Diagram **NOT** accurately drawn

P   6 cm   A   2 cm   O

3.7 cm

36°

C

R
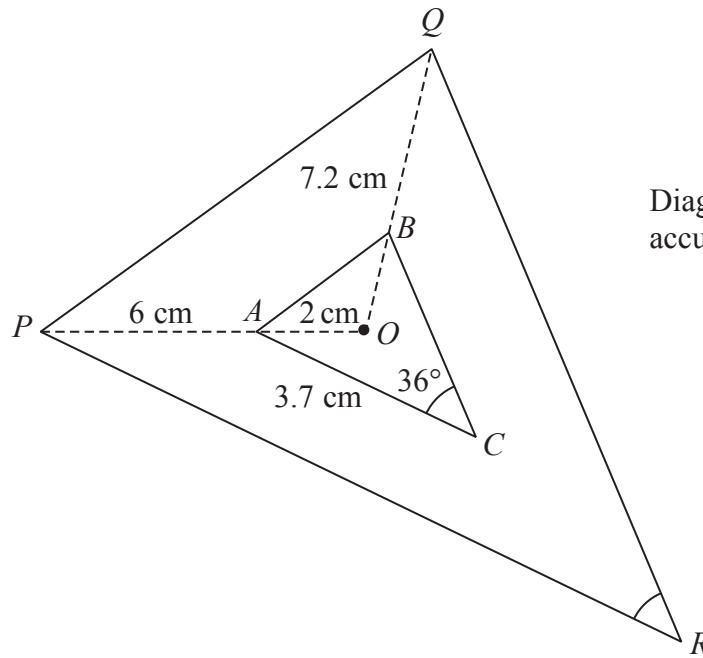
Triangle *PQR* is an enlargement, centre *O*, of triangle *ABC*.
OAP and *OBQ* are straight lines.
OA = 2 cm.
AP = 6 cm.
BQ = 7.2 cm.
AC = 3.7 cm.
Angle *C* = 36°

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

.... °

(1)

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

.... cm

(2)

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

.... cm

(3)

(Total for Question 17 is 6 marks)

18 (a) Dilip buys a painting for $ 675
Later, he sells it and makes a percentage profit of 12%.

Work out the price for which Dilip sells the painting.

$ ....
(3)

(b) Renuka sells her car.
She makes a loss of $ 2162
Her percentage loss is 23%.

Work out the price for which Renuka sells her car.

$ ....
(3)

(Total for Question 18 is 6 marks)

19 $\mathscr{E}$ = {even numbers}
A = {factors of 8}
B = {factors of 20}

List the members of $A \cap B$

....

(Total for Question 19 is 2 marks)

20
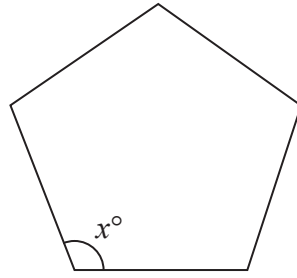
Diagram **NOT** accurately drawn

The diagram shows a regular 5-sided polygon.

(a) Work out the value of x.

$x =$ ....
(2)
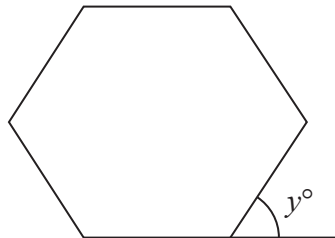
Diagram **NOT** accurately drawn

The diagram shows a regular 6-sided polygon.

(b) Work out the value of y.

$y =$ ....
(2)

(Total for Question 20 is 4 marks)

Turn over ▶

P 4 2 9 5 2 A 0 1 7 2 0

21 (a) Simplify $\dfrac{y^8}{y^3}$

....

(1)

(b) Solve the inequality $4(x + 3) > 8$

....

(2)

(Total for Question 21 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS

Do NOT write in this space.

BLANK PAGE

Do NOT write on this page.

BLANK PAGE

Do NOT write on this page.