Write your name here

| Surname | Other names |
|---|---|
| | |

**Pearson Edexcel**
**International GCSE**

Centre Number | Candidate Number

# Mathematics A

## Level 1/2
## Paper 2F

## Foundation Tier

Specimen Paper
**Time: 2 hours**

Paper Reference
**4MA1/2F**

**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* ▶

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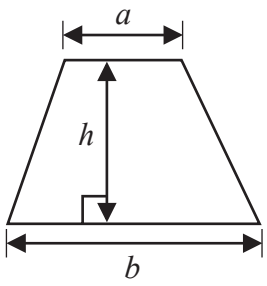
S 5 6 2 8 2 A 0 1 2 0

Pearson

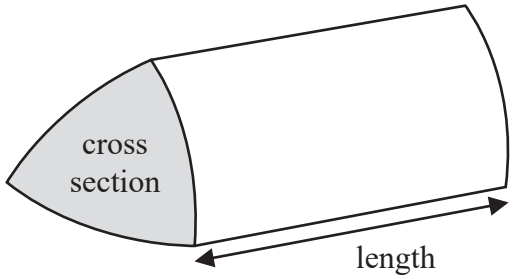
**International GCSE Mathematics**

**Formulae sheet – Foundation Tier**

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

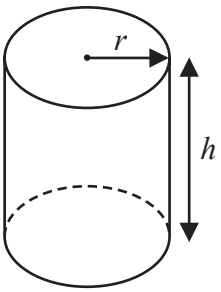



**Volume of prism** = area of cross section × length




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

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



**Answer ALL TWENTY TWO questions.**

**Write your answers in the spaces provided.**

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

**1**

| | | | | | |
|---|---|---|---|---|---|
| 6 | 9 | 17 | 20 | 28 | 63 |

From the numbers in the box, write down

(a) the multiple of 5

.....

**(1)**

(b) the factor of 30

.....

**(1)**

(c) the square number

.....

**(1)**

(d) the prime number

.....

**(1)**

**(Total for Question 1 is 4 marks)**

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

**2** The table shows the lowest temperature for the month in each of six months for Winnipeg in Canada.

| **Month** | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| **Lowest temperature (°C)** | 13 | 12 | 6 | 0 | –9 | –18 |

(a) Which of these six months has the lowest temperature?

.....

**(1)**

(b) Work out the difference between the lowest temperature in August and the lowest temperature in November.

..... °C

**(1)**

The lowest temperature in March was 23 °C lower than the lowest temperature in August.

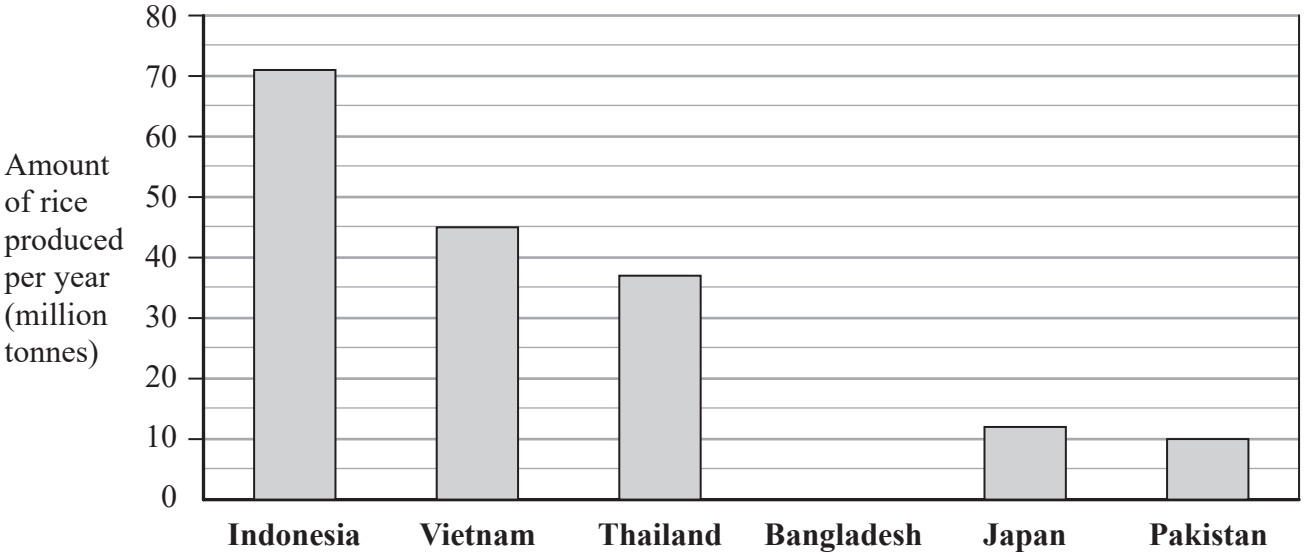
(c) Work out the lowest temperature in March.

..... °C

**(1)**

**(Total for Question 2 is 3 marks)**

**3** The bar chart shows information about the amount of rice produced per year in each of five countries.




Using the information in the bar chart,

(a) write down the amount of rice produced in Vietnam,

..... million tonnes

**(1)**

(b) write down the country that produced 37 million tonnes of rice,

.....

**(1)**

(c) work out how much more rice is produced in Indonesia than in Pakistan.

..... million tonnes

**(1)**

Bangladesh produced 35 million tonnes of rice per year.

(d) Draw a bar on the bar chart to show this information.

**(1)**

India produces 155 million tonnes of rice per year.
China produces 205 million tonnes of rice per year.

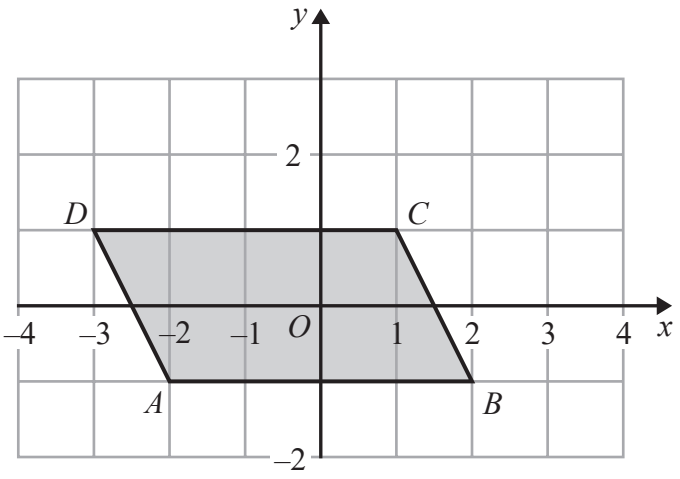
(e) Express 155 as a percentage of 205
Give your answer correct to 1 decimal place.

.....%

**(2)**

**(Total for Question 3 is 6 marks)**

**4** The diagram shows a quadrilateral *ABCD* drawn on a coordinate grid.




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

(.....  , .....)

**(1)**

(b) Write down the mathematical name of quadrilateral *ABCD*.

.....

**(1)**

(c) On the quadrilateral, mark with arrows (>>) a pair of parallel lines.

**(1)**

(d) On the diagram, mark an obtuse angle with the letter T.

**(1)**

**(Total for Question 4 is 4 marks)**

**5** Here are some facts about JFK International Airport.

| | |
|---|---|
| Land covered | 1997 hectares |
| Total runway length | 14 kilometres |
| Distance to Texas | 2875 kilometres |
| Distance to California | 4725 kilometres |

(a) Write down the value of the 2 in the number 4725

.....

**(1)**

(b) Write the number 1997 correct to the nearest thousand.

.....

**(1)**

It is further from JFK International Airport to California than it is to Texas.

(c) How much further?

..... kilometres

**(2)**

(d) Change 14 kilometres into miles.
Use 8 kilometres = 5 miles.

..... miles

**(2)**

**(Total for Question 5 is 6 marks)**

**6** Rolando bought

a magazine for 3.20 euros
a bunch of flowers for 4.25 euros
and 2 bars of chocolate.

Rolando paid with a 20 euro note.
He received 7.25 euros change.

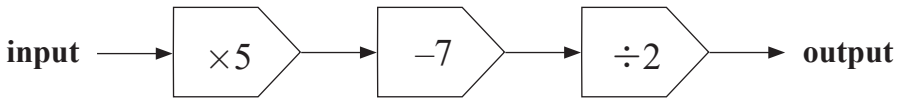
The cost of each bar of chocolate was the same.

Work out the cost of 1 bar of chocolate.

..... euros

**(Total for Question 6 is 3 marks)**

**7** Here is a number machine.




(a) Work out the output when the input is 15

.....

**(1)**

(b) Work out the input when the output is 124

.....

**(2)**

The input is $p$.
The output is $T$.

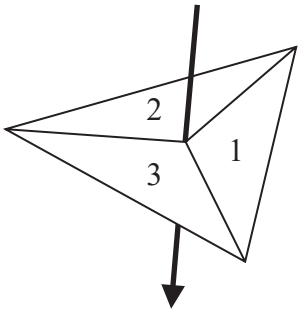
(c) Write down a formula for $T$ in terms of $p$.

.....

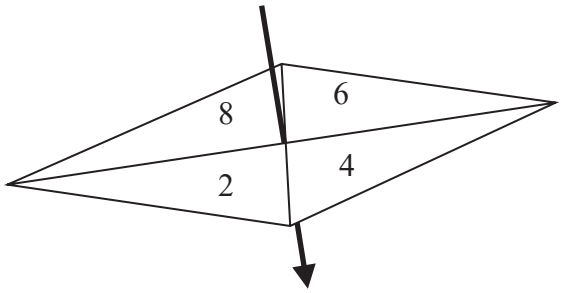
**(2)**

**(Total for Question 7 is 5 marks)**

**8** Hanako has two fair spinners.
Spinner **A** is 3-sided and can land on 1, 2 or 3
Spinner **B** is 4-sided and can land on 2, 4, 6 or 8



Spinner **A**



Spinner **B**

Hanako spins each spinner once.

She adds together the number that spinner **A** lands on and the number that spinner **B** lands on to get her total score.

(a) Complete the table to show all possible total scores.
Four total scores have been done for you.

Spinner **A**

| Spinner **B** | **1** | **2** | **3** |
|---|---|---|---|
| **2** | 3 | | |
| **4** | | 6 | |
| **6** | | 8 | 9 |
| **8** | | | |

**(2)**

(b) Find the probability that

(i) Hanako's total score is 8

.....

(ii) Hanako's total score is less than 7

.....

**(2)**

**(Total for Question 8 is 4 marks)**

**9** (a) Write these numbers in order of size.

$\frac{2}{3}$ $\frac{7}{11}$ 60% $\frac{5}{8}$ 0.613

Start with the smallest number.

.....

**(3)**

(b) Find the value of $\sqrt[3]{175.616}$

.....

**(1)**

(c) Find the square of $-4.1$

.....

**(1)**

(d) (i) Work out the value of $\frac{\sqrt{2.9 \times 3.76}}{4.2 - 0.63}$

Write down all the figures on your calculator display.

.....

**(2)**

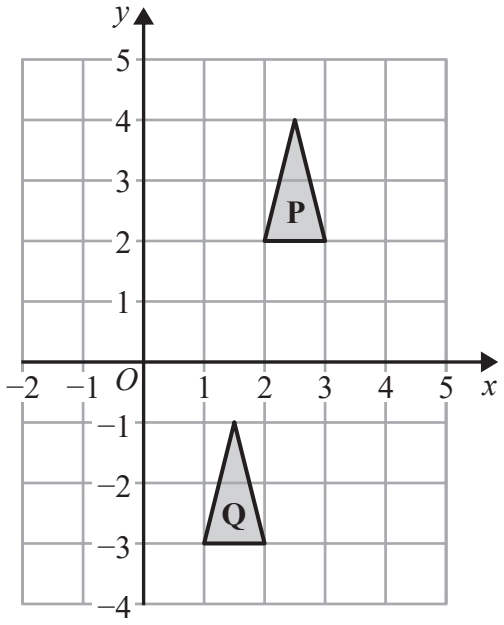
(ii) Give your answer to part (d) (i) correct to 3 significant figures.

.....

**(1)**

**(Total for Question 9 is 8 marks)**

**10**




Describe fully the single transformation that maps triangle **P** onto triangle **Q**.

.....

**(Total for Question 10 is 2 marks)**

**11** (a) Write $\frac{56}{9}$ as a mixed number.

.....

**(1)**

(b) Show that $\frac{2}{3} \div \frac{1}{2} = \frac{4}{3}$

**(1)**

(c) Show that $\frac{7}{10} - \frac{1}{4} = \frac{9}{20}$

**(2)**

**(Total for Question 11 is 4 marks)**

**12** The width of a rectangle is 8 cm less than the length of the rectangle.
The perimeter of the rectangle is 54 cm.

Find the area of the rectangle.

..... $cm^2$

**(Total for Question 12 is 4 marks)**

**13** (a) Solve $2x - 3 = 18$

$x =$ .....

**(2)**

(b) Simplify fully $4y + 12 - 2y + 4$

.....

**(2)**

(c) Simplify $(t^5)^3$

.....

**(1)**

(d) Simplify $3e^7f \times 4e^2f$

.....

**(2)**

(e) Solve the inequality $2q \geqslant 31 - 3q$

.....

**(2)**

$-2 \leqslant n < 3$
$n$ is an integer

(f) Write down all the possible values of $n$.

.....

**(2)**

**(Total for Question 13 is 11 marks)**

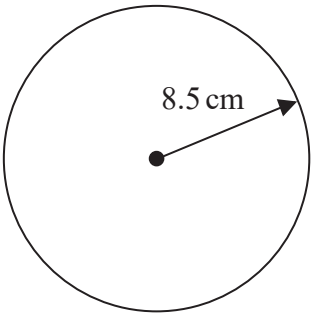
**14** 2 kilograms of grapes cost £6.20
500 grams of grapes and 3 kilograms of plums cost £11.60

Work out the cost of 1 kilogram of plums.

£.....

**(Total for Question 14 is 3 marks)**

**15** The diagram shows a circle and a trapezium.



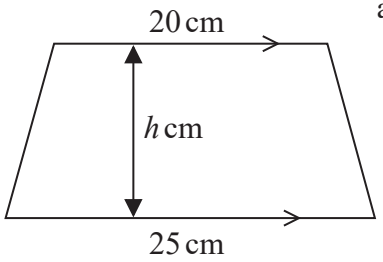




Diagram **NOT** accurately drawn

The height of the trapezium is $h$ cm.

The area of the circle is equal to the area of the trapezium.

Work out the value of $h$.
Give your answer correct to 1 decimal place.

.....

**(Total for Question 15 is 4 marks)**

**16** In a bag there are only red bricks, blue bricks, green bricks and orange bricks.

The number of green bricks in the bag is the same as the number of orange bricks.

Jiao takes at random a brick from the bag.
The table gives the probability that Jiao takes a red brick and the probability that he takes a blue brick.

| **Colour** | red | blue | green | orange |
|---|---|---|---|---|
| **Probability** | 0.26 | 0.3 | | |

(a) Work out the probability that Jiao takes an orange brick.

.....

**(3)**

Jiao puts the brick back into the bag.
There are 91 red bricks in the bag.

Jiao is going to build a tower using all the red bricks and all the blue bricks but no other bricks.
The tower will be in the shape of a cuboid.
There will be 4 bricks in each layer of the tower.

(b) Work out how many layers the tower will have.

.....

**(3)**

**(Total for Question 16 is 6 marks)**

**17** Here are the first five terms of a number sequence.

7 11 15 19 23

(a) Find an expression, in terms of $n$, for the $n$th term of this sequence.

.....

**(2)**

The $n$th term of a different number sequence is given by $80 - 2n$

(b) Write down the first 3 terms of this sequence.

....., ....., .....

**(2)**

Yuen says there are no numbers that are in both of the sequences.
Yuen is correct.

(c) Explain why.

.....

.....

**(1)**

**(Total for Question 17 is 5 marks)**

**18** Aayush invests 18 000 rupees for 3 years at a rate of 4% per year compound interest.

Work out the total amount of interest Aayush has received by the end of 3 years.
Give your answer correct to the nearest rupee.

..... rupees

**(Total for Question 18 is 3 marks)**

**19**

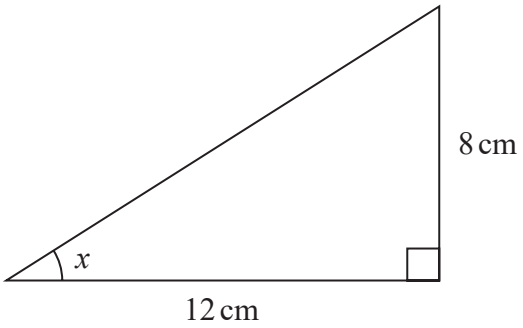



Diagram **NOT** accurately drawn

Calculate the size of angle $x$.
Give your answer correct to 1 decimal place.

.....°

**(Total for Question 19 is 3 marks)**

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DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

**20**

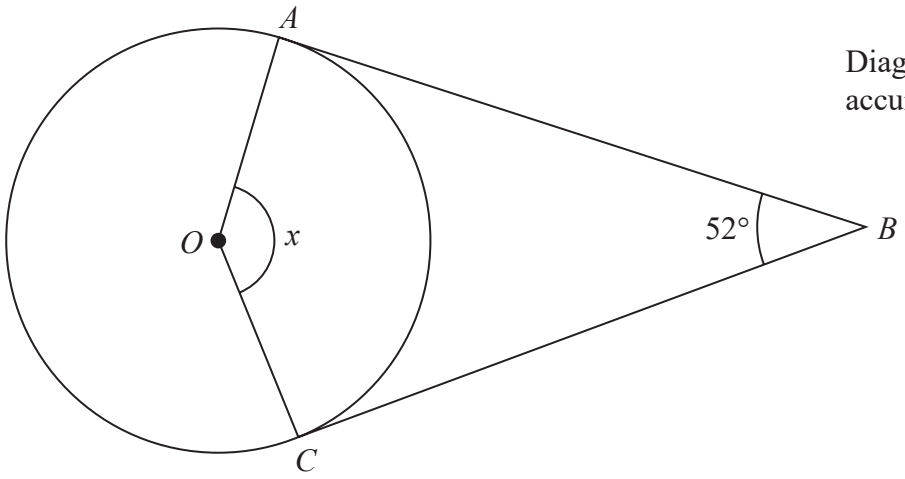


Diagram **NOT** accurately drawn

*A* and *C* are points on a circle, centre *O*.
*AB* and *CB* are tangents to the circle.
Angle *ABC* = 52°

Work out the size of angle *x*.
Give a reason for each stage of your working.

*x* = ..... °

**(Total for Question 20 is 4 marks)**

**21** Solve the simultaneous equations

$$6x + 4y = 19$$
$$5x + y = 3$$

Show clear algebraic working.

$x =$.....

$y =$.....

**(Total for Question 21 is 3 marks)**

**22** The diagram shows two congruent regular pentagons drawn inside a regular octagon.

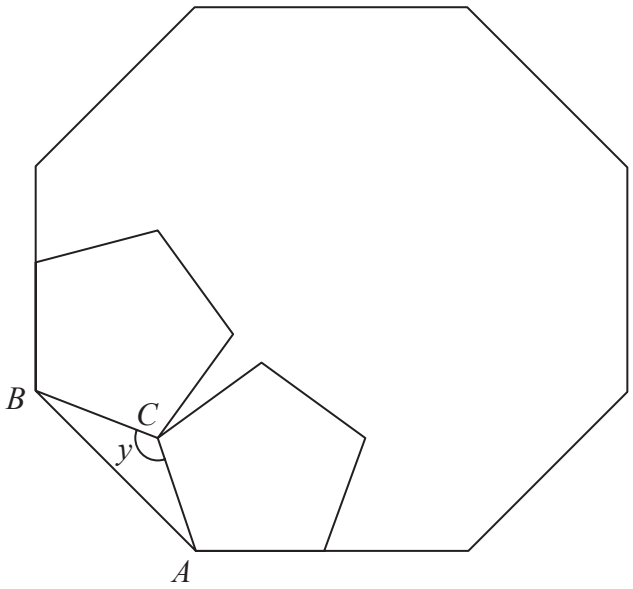


Diagram **NOT** accurately drawn

One side of each pentagon lies along a side of the octagon.

*AB* is a side of the octagon.
*AC* is a side of one of the pentagons.
*BC* is a side of the other pentagon.

Work out the size of angle *y*.
Show your working clearly.

.....°

**(Total for Question 22 is 5 marks)**

**TOTAL FOR PAPER IS 100 MARKS**