Write your name here

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

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

Centre Number

Candidate Number

## Mathematics A
**Level 1/2**
**Paper 2F**

**Foundation Tier**

Sample assessment material for first teaching September 2016
**Time: 2 hours**

Paper Reference
**4MA1/2F**

Total Marks

**You must have:**
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

## 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.
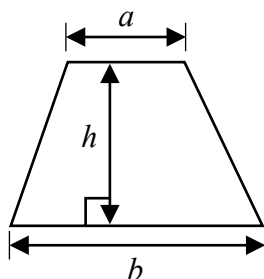
Turn over ▶

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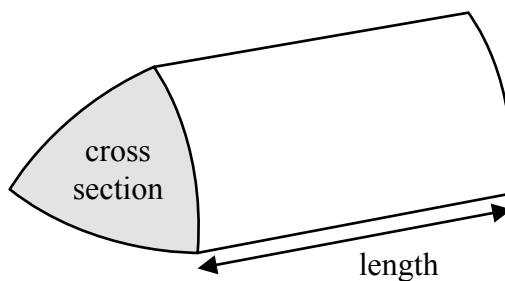
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**PEARSON**

# International GCSE Mathematics

## Formulae sheet – Foundation Tier
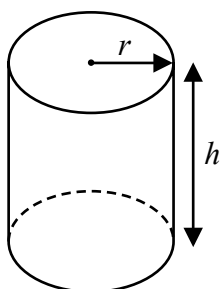
**Area of trapezium** $= \frac{1}{2}(a + b)h$



**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 SIX 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 smallest number?

.............................................

(1)

(b) Which number in the table is a multiple of 5?

.............................................

(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)

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

**2** On the probability scale, mark with a cross (×) the probability that

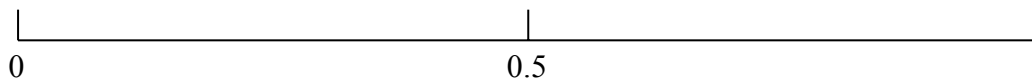(a) a fair 6-sided dice will land on a number less than 7
Label this cross **A**.

(1)

(b) a fair 6-sided dice will show an even number when thrown.
Label this cross **B**.

(1)

| | | |
|---|---|---|
| 0 | 0.5 | 1 |

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

**3** The table shows midday temperatures in five cities one day in winter.

| City | Midday temperature (°C) |
|---|---|
| Paris | 2 |
| Cardiff | −5 |
| London | −3 |
| Edinburgh | −1 |
| Berlin | −8 |

(a) Which city had the lowest midday temperature?

.......................................................

(1)

The midday temperature in Exeter is 6°C higher than the midday temperature in Cardiff.

(b) Work out the midday temperature in Exeter.

....................................... °C

(1)

By midnight, the temperature in London had fallen by 4°C.

(c) Work out the midnight temperature in London.

....................................... °C

(1)

The midday temperature in Glasgow is halfway between the midday temperature in Paris and the midday temperature in Berlin.

(d) Work out the midday temperature in Glasgow.

....................................... °C

(2)

**(Total for Question 3 is 5 marks)**

**4** There are 30 counters in a bag.
1 of the counters is yellow.
The rest of the counters are either blue or green.

Sharita takes a counter from the bag at random.

(a) Write down the probability that she will take

(i) a yellow counter

.......................................

**(1)**

(ii) a red counter

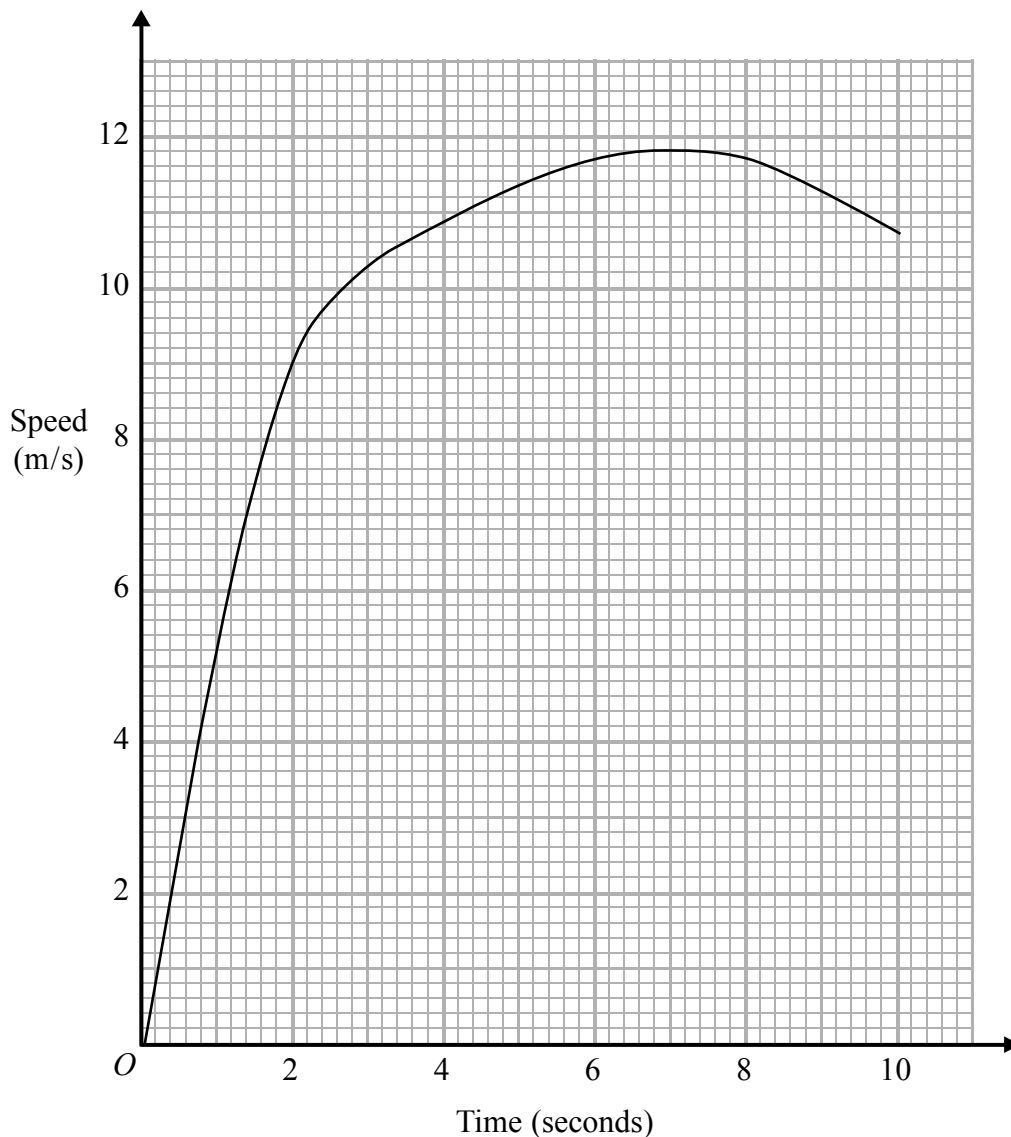.......................................

**(1)**

The probability that Sharita will take a blue counter from the bag is $\frac{3}{10}$

(b) Find the probability that she will **not** take a blue counter.

.......................................

**(1)**

**(Total for Question 4 is 3 marks)**

**5** Jason runs in a race.
The graph shows his speed, in metres per second (m/s), during the first 10 seconds of the race.



(a) Write down Jason's speed at 2 seconds.

.....................................................m/s
**(1)**

(b) Write down Jason's greatest speed.

.....................................................m/s
**(1)**

(c) Write down the time at which Jason's speed was 3 m/s.

.....................................................seconds
**(1)**

**(Total for Question 5 is 3 marks)**

**6** 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 6 is 3 marks)**

**7** *PQR* is a triangle.
*PQ* = 7 cm and *QR* = 7.5 cm.
Angle *QPR* = 50°

Draw accurately the triangle *PQR* with *PQ* as its base.

P ————————————————————————— Q

**(Total for Question 7 is 2 marks)**

**8** (a) Find the value of $\sqrt{46.24}$

.........................................
**(1)**

(b) Find the value of $9^3$

.........................................
**(1)**

(c) Find the cube root of 19.683

.........................................
**(1)**

**(Total for Question 8 is 3 marks)**

**9** (a) Simplify $3m + 2m - m$

...............................................

**(1)**

(b) Simplify $6k \times 3p$

...............................................

**(1)**

(c) Solve $7e = 28$

$e = $ ...............................................

**(1)**

$P = 4r - 3q$

(d) Work out the value of $P$ when $r = -7$ and $q = 5$

$P = $ ...............................................

**(2)**

$P = 4r - 3q$

(e) Work out the value of $r$ when $P = 9$ and $q = 8$

$r = $ ...............................................

**(3)**

(f) Factorise $5c + 30$

...............................................

**(1)**

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

**10** Umar buys 7 first-class tickets and 9 second-class tickets for the train journey from Colombo to Kandy.
The total cost is 4500 Sri Lankan rupees.
The cost of each first-class ticket is 360 Sri Lankan rupees.

(a) Work out the cost of each second-class ticket.

...................................... Sri Lankan rupees

**(3)**

The train left Colombo at 16:55
The train arrived in Kandy at 20:15

(b) How long did the train take to get from Colombo to Kandy?
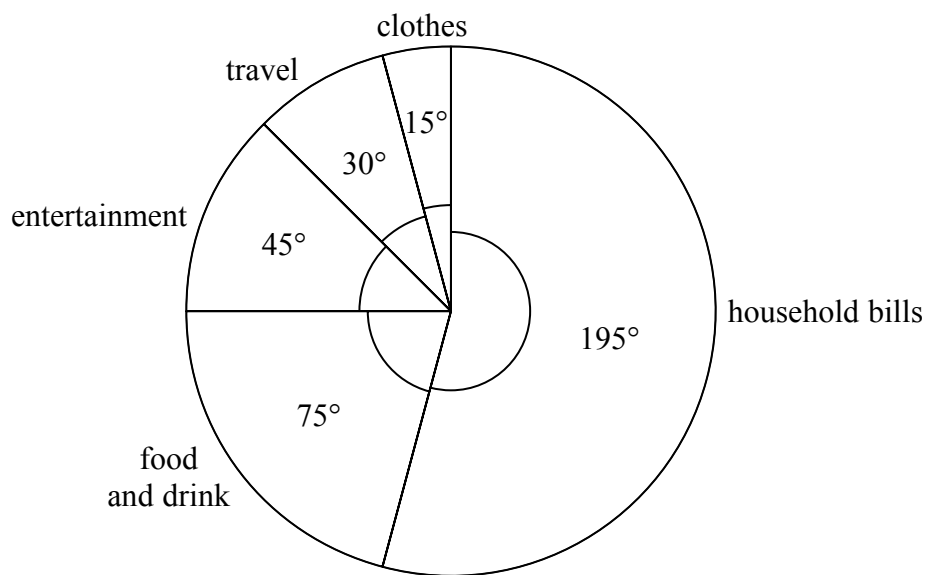
......................................

**(2)**

**(Total for Question 10 is 5 marks)**

**11** The pie chart shows information about Andrew's spending last month.



Andrew spent \$80 on travel last month.

(a) Work out the amount Andrew spent on household bills last month.

\$.....................................................

**(3)**

A second pie chart is to be drawn for Cathy's spending.
Cathy spent a total of \$800 last month.
She spent \$120 on entertainment last month.

(b) Calculate the size of the angle for entertainment in the second pie chart.

.....................................................°

**(2)**

**(Total for Question 11 is 5 marks)**

**12** The diagram shows the floor plan of a room in Kate's house.
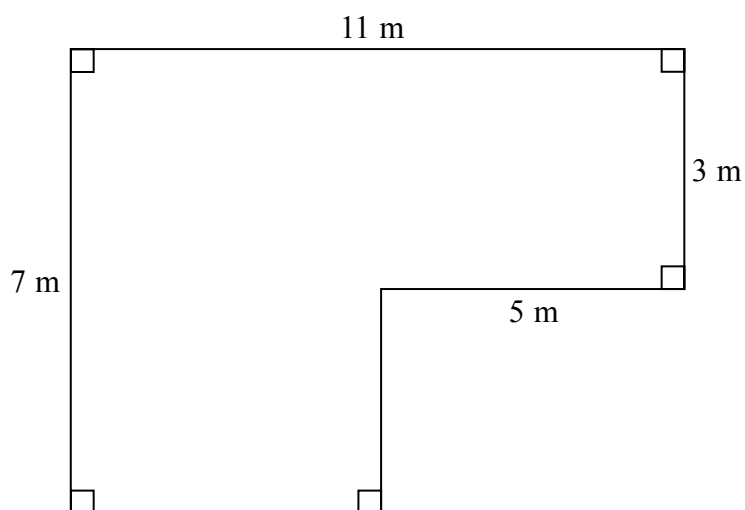


11 m

Diagram **NOT** accurately drawn

3 m

7 m

5 m

Kate is going to cover the floor with tiles.
She is going to buy some packs of tiles.

The tiles in each pack of tiles cover $2\,m^2$ of floor.
Each pack of tiles costs £24.80

Work out how much it will cost Kate to buy the packs of tiles she needs.

£.......................................

**(Total for Question 12 is 5 marks)**

**13** A ship has a length of 345 metres.
A scale model is made of the ship.
The scale of the model is 1:200

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

...................................................cm

**(Total for Question 13 is 3 marks)**

**14** *A* has coordinates (3, 6)
*B* has coordinates (−5, 8)

Work out the coordinates of the midpoint of *AB*.

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

**(Total for Question 14 is 2 marks)**

**15** Here is a list of the ingredients needed to make leek and potato soup for 6 people.

<div style="border:1px solid">

**Leek and Potato Soup**

Ingredients for 6 people

| | |
|---|---|
| 900 ml | chicken stock |
| 900 ml | water |
| 750 g | leeks |
| 350 g | potatoes |
| 350 g | onions |

</div>

Paul wants to make leek and potato soup for 15 people.

(a) Work out the amount of chicken stock he needs.

............................................ml

**(2)**

Mary makes leek and potato soup for a group of people.
She uses 3 kg of leeks.

(b) Work out the number of people in the group.

............................................

**(2)**

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

**16** Find the lowest common multiple (LCM) of 20, 30 and 45

......................................................

**(Total for Question 16 is 3 marks)**

**17** The first four terms of an arithmetic sequence are

$$2 \qquad 9 \qquad 16 \qquad 23$$

Write down an expression, in terms of $n$, for the $n$th term.

......................................................

**(Total for Question 17 is 2 marks)**
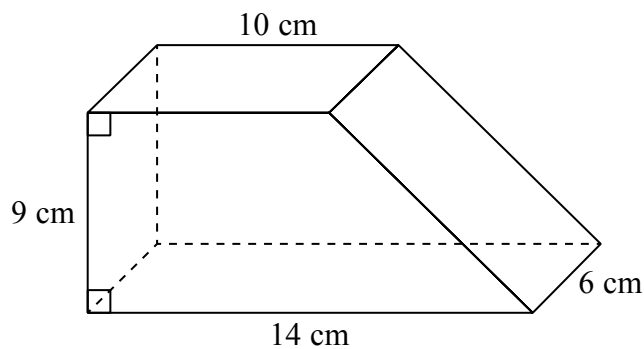
**18**



10 cm

Diagram **NOT**
accurately drawn

9 cm

6 cm

14 cm

The diagram shows a solid prism.
The cross section of the prism is a trapezium.

The prism is made from wood with density 0.7 g/cm³

Work out the mass of the prism.

..................................................... g

**(Total for Question 18 is 4 marks)**

**19** (a) Simplify $p^5 \times p^4$

.......................................

(1)

(b) Simplify $(m^4)^{-3}$

.......................................

(1)

(c) Write down the value of $c^0$

.......................................

(1)

(d) Solve $5(x + 7) = 2x - 10$
Show clear algebraic working.

$x =$ .......................................

(3)

**(Total for Question 19 is 6 marks)**

**20** On 1 May 2012, the cost of 5 grams of gold was 14 000 rupees.
The cost of gold decreased by 7.5% from 1 May 2012 to 1 May 2013

Work out the cost of 20 grams of gold on 1 May 2013

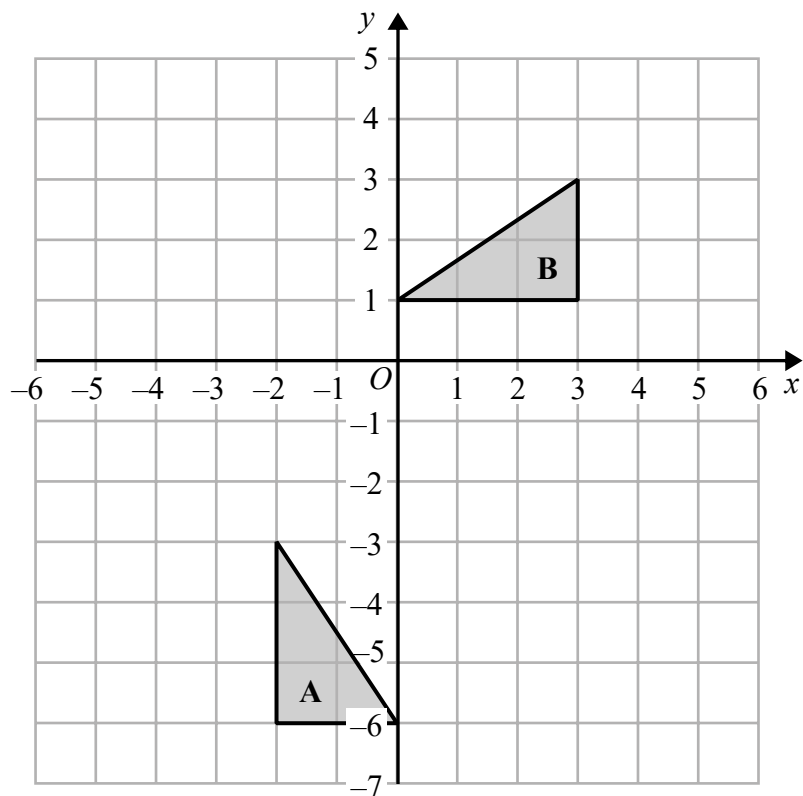........................................rupees

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

**21**



(a) On the grid, translate triangle **A** by the vector $\begin{pmatrix} 5 \\ 2 \end{pmatrix}$

(1)

(b) Describe fully the single transformation that maps triangle **A** onto triangle **B**.

.......................................................................................................................................................................

.......................................................................................................................................................................

(3)

**(Total for Question 21 is 4 marks)**

**22** *a*, *b*, *c* and *d* are 4 integers written in order of size, starting with the smallest integer.

The mean of *a*, *b*, *c* and *d* is 15
The sum of *a*, *b* and *c* is 39

(a) Find the value of *d*.

$d =$ .......................................................
(2)

Given also that the range of *a*, *b*, *c* and *d* is 10

(b) work out the median of *a*, *b*, *c* and *d*.

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

**(Total for Question 22 is 4 marks)**

**23** Kwo invests HK\$40 000 for 3 years at 2% per year compound interest.
Work out the value of the investment at the end of 3 years.

HK\$.................................................

**(Total for Question 23 is 3 marks)**

**24** Solve the simultaneous equations

$$3x + y = 13$$
$$x - 2y = 9$$

Show clear algebraic working.

$x =$ ...................................................

$y =$ ...................................................

**(Total for Question 24 is 3 marks)**

**25** (a) Show that $\dfrac{5}{9} + \dfrac{1}{6} = \dfrac{13}{18}$

**(2)**

(b) Show that $4\dfrac{2}{3} \div 3\dfrac{5}{9} = 1\dfrac{5}{16}$
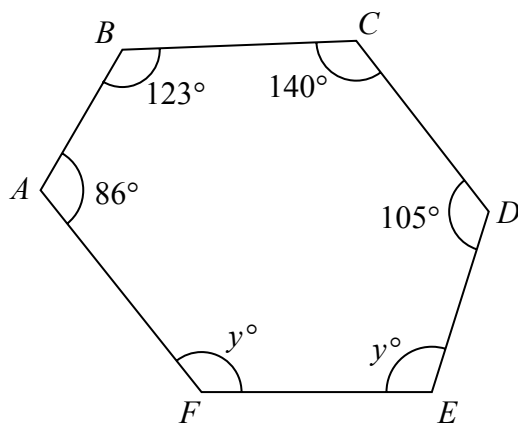
**(3)**

**(Total for Question 25 is 5 marks)**

**26**



Diagram **NOT**
accurately drawn

*ABCDEF* is a hexagon.

Work out the value of *y*.

*y* = ........................................................

**(Total for Question 26 is 4 marks)**

**TOTAL FOR PAPER IS 100 MARKS**