

Write your name here:

Surname:	Other Names:
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Mathematics

Practice Papers Set 1

Paper 3 (Calculator)

Foundation Tier

Time: 1 hour 30 minutes

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser

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.
- Answer the questions in the spaces provided
– there may be more space than you need.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out**.

Information

- The total mark for this paper is 80
- 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.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

1 The table shows midday temperatures in four cities on one day in winter.

City	Midday temperature ($^{\circ}\text{C}$)
Paris	2
Cardiff	-5
London	-3
Edinburgh	-1

(a) Which city had the lowest midday temperature?

.....
(1)

By midnight, the temperature in London had fallen by 5°C .

(b) Work out the midnight temperature in London.

..... $^{\circ}\text{C}$
(2)

(Total for Question 1 is 3 marks)

2 Sophie has £25 to spend on plants.
Each plant costs £3.95
She buys as many plants as she can.

(a) How many plants does Sophie buy?

.....
(2)

(b) How much change should Sophie receive from £25?

£.....
(2)

(Total for Question 2 is 4 marks)

3 The diagram shows the distances, in kilometres, between some towns, by road.

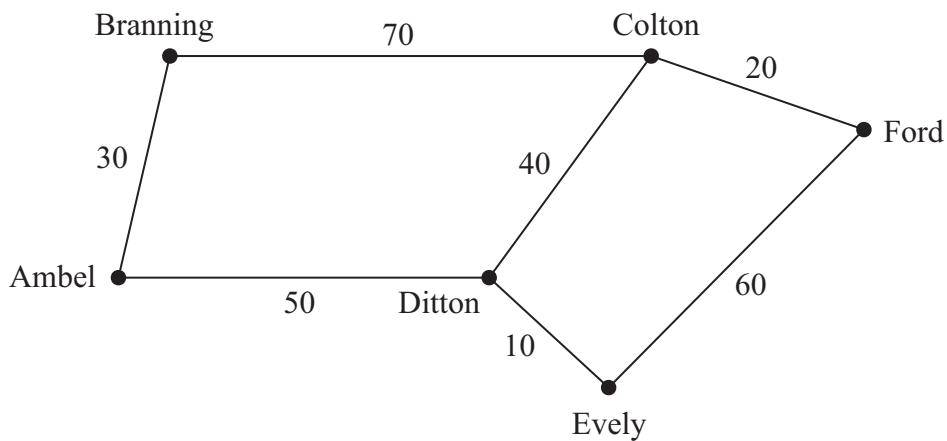


Diagram **NOT** accurately drawn

Work out the shortest distance between Ambel and Ford by road.

..... km

(Total for Question 3 is 2 marks)

4 $a = 4b$

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

$a =$
(1)

$P = 4d - 3$

(b) Work out the value of P when $d = 2$

$P =$
(2)

(Total for Question 4 is 3 marks)

5 (a) Simplify $m + m + m + m + m$

.....
(1)

(b) Simplify $2p + 7p$

.....
(1)

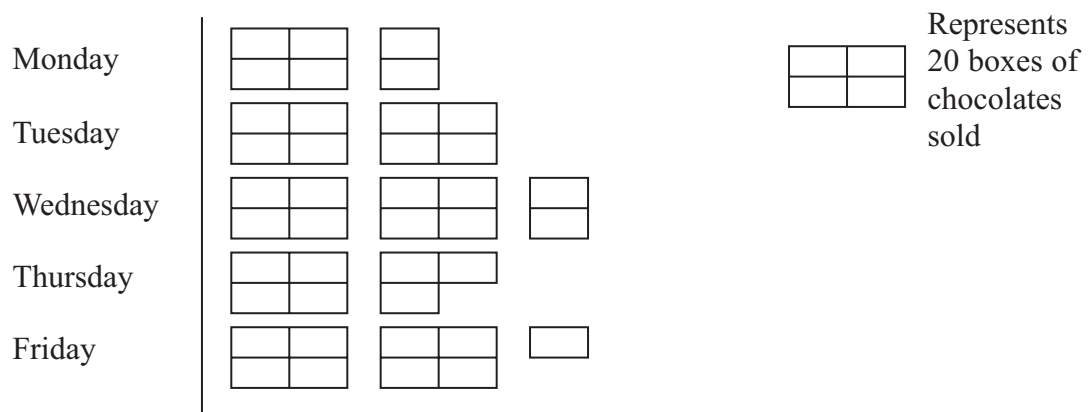
(c) Simplify $t \times w \times 4$

.....
(1)

(Total for Question 5 is 3 marks)

6 Here is a pictogram.

It shows the number of boxes of chocolates Mr Fenn sold last week from Monday to Friday.



What fraction of the total number of these boxes of chocolates did Mr Fenn sell on Tuesday?

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

7 Green paint can be made by mixing yellow paint and blue paint in the ratio 2 : 3
Wendy makes 15 litres of green paint.

Work out how many litres of blue paint Wendy uses.

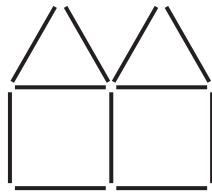
..... litres

(Total for Question 7 is 2 marks)

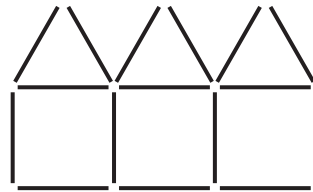
10 Here are some patterns made from sticks.



Pattern number 1



Pattern number 2



Pattern number 3

(a) In the space below, draw Pattern number 4

(1)

This rule can be used to work out the number of sticks in each pattern.

Multiply the Pattern number by 5 and then add 1

(b) Work out the number of sticks in Pattern number 6

.....
(2)

(c) A pattern is made from 61 sticks.
Work out the Pattern number.

.....
(2)

(Total for Question 10 is 5 marks)

11 Angela and Michelle both work as waitresses at the same restaurant.

This formula is used to work out the total amount of money each waitress gets.

$$\text{Total amount} = \text{£}6.50 \times \text{number of hours worked} + \text{tips}$$

The table shows the number of hours Angela and Michelle each worked last Saturday. It also shows the tips they got.

	Number of hours worked	Tips
Angela	8	£12
Michelle	7	£15

Who got the higher total amount of money last Saturday?
You must show clearly how you got your answer.

(Total for Question 11 is 4 marks)

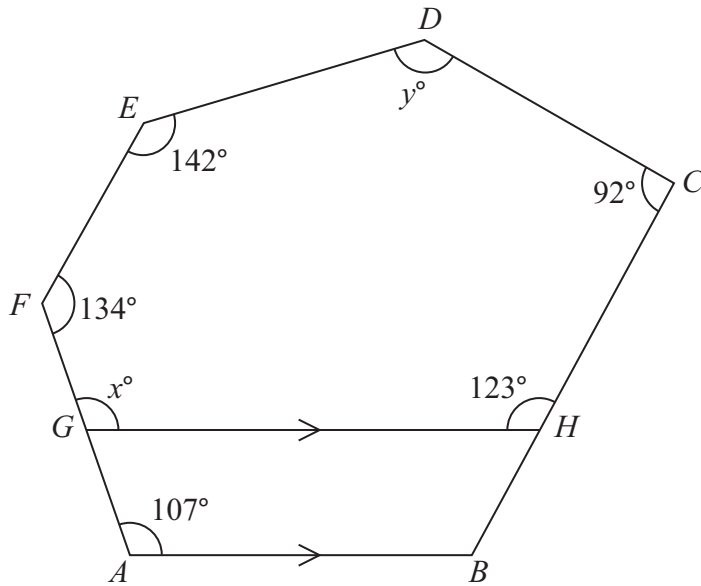


Diagram **NOT** accurately drawn

ABCDEF is a hexagon.
G is a point on *AF*.
H is a point on *BC*.
GH is parallel to *AB*.

(a) Give a reason why $x = 107$

(1)

(b) Work out the value of y .

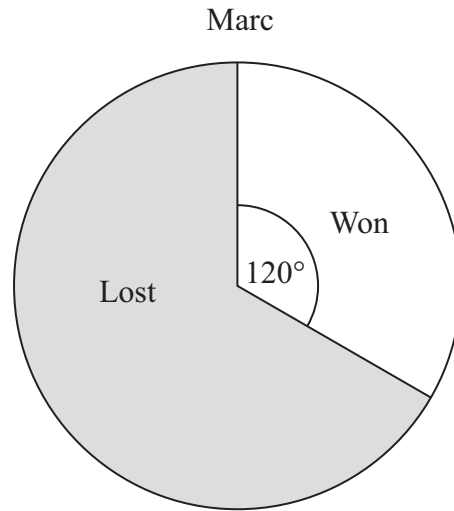
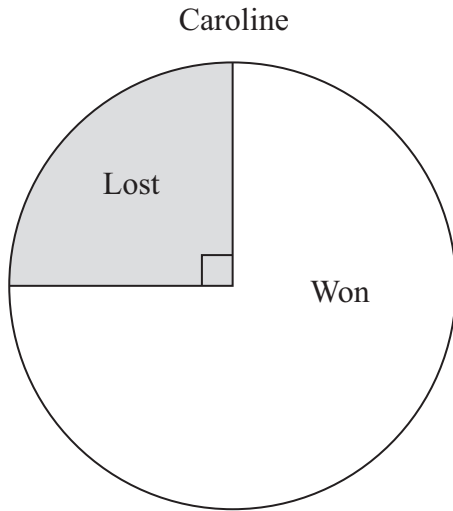
$y = \dots\dots\dots$
 (4)

(Total for Question 12 is 5 marks)

13 Caroline and Marc are in a darts team.

The pie charts show information about the number of games Caroline and Marc each won last year.

They also show information about the number of games Caroline and Marc each lost last year.



Caroline played 52 games.

Marc played 150 games.

Marc won more games than Caroline.

How many more?

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

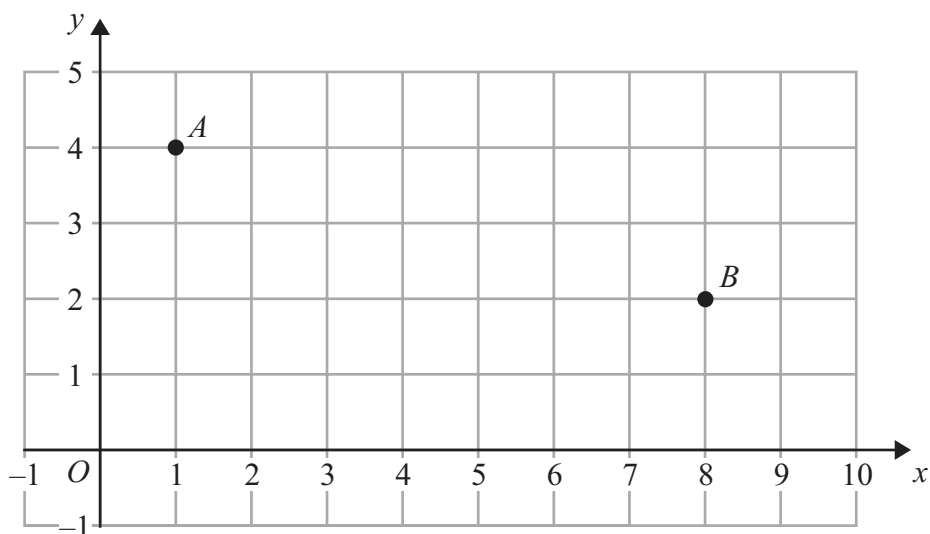
14 The table shows information about the mark scored on an examination question by each of 40 students.

Mark	Number of students
0	13
1	2
2	3
3	8
4	14

Work out the mean mark.

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

- 15 Two points, A and B , are plotted on a centimetre grid.
 A has coordinates $(1, 4)$ and B has coordinates $(8, 2)$.



- (a) Work out the coordinates of the midpoint of AB .

(.....,)
 (2)

- (b) Use Pythagoras' Theorem to work out the length of AB .
 Give your answer correct to 3 significant figures.

..... cm
 (4)

(Total for Question 15 is 6 marks)

- 16 Express 204 as a product of its prime factors.

.....

(Total for Question 16 is 3 marks)

17 Here is a cuboid.

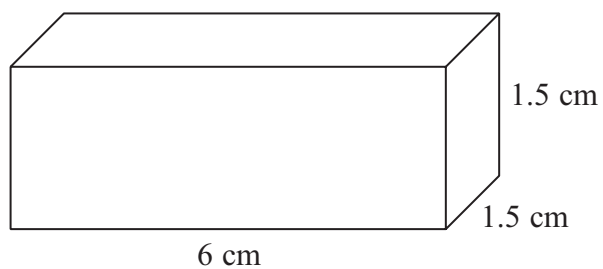


Diagram **NOT** accurately drawn

The cuboid is 6 cm by 1.5 cm by 1.5 cm.

Work out the total surface area of the cuboid.

..... cm²

(Total for Question 17 is 3 marks)

- 18** A box contains four different kinds of chocolates.
Debbie takes at random a chocolate from the box.
The table shows the probability of Debbie taking an Orange or a Coffee or a Caramel chocolate.

Chocolate	Probability
Orange	0.15
Coffee	0.40
Caramel	0.35
Strawberry	

- (a) Work out the probability that Debbie takes a Strawberry chocolate.

.....
(2)

- (b) Work out the probability that Debbie takes an Orange chocolate or a Coffee chocolate.

.....
(2)

(Total for Question 18 is 4 marks)

- 19** Yoko flew on a plane from Tokyo to Sydney.
The plane flew a distance of 7800 km.
The flight time was 9 hours 45 minutes.

Work out the average speed of the plane in kilometres per hour.

..... km/h

(Total for Question 19 is 3 marks)

20 Here is a list of ingredients for making 18 mince pies.

Ingredients for 18 mince pies

225 g of butter
350 g of flour
100 g of sugar
280 g of mincemeat
1 egg

Elaine wants to make 45 mince pies.

Elaine has

1 kg of butter
1 kg of flour
500 g of sugar
600 g of mincemeat
6 eggs

Does Elaine have enough of each ingredient to make 45 mince pies?
You must show clearly how you got your answer.

(Total for Question 20 is 4 marks)

21 (a) Show that $\frac{7}{8} - \frac{5}{6} = \frac{1}{24}$

(2)

(b) Show that $\frac{5}{8} \div \frac{7}{12} = 1\frac{1}{14}$

(2)

(Total for Question 21 is 4 marks)

22 The table shows the surface areas, in km^2 , of five oceans.

Ocean	Surface area (km^2)
Atlantic	7.68×10^7
Indian	6.86×10^7
Pacific	1.56×10^8
Southern	2.03×10^7
Arctic	1.41×10^7

(a) Which of these oceans has the largest surface area?

.....
(1)

(b) Work out the total surface area, in km^2 , of all five oceans.
Give your answer in standard form.

..... km^2
(2)

The total surface area of the Earth is $5.10 \times 10^8 \text{ km}^2$.

(c) Express the total surface area of the five oceans as a percentage of the total surface area of the Earth.
Give your answer correct to 1 decimal place.

..... %
(2)

Total for Question 22 is 5 Marks

Do NOT write in this space.

23 Viv wants to invest £2000 for 2 years in the same bank.

The International Bank

Compound Interest

4% for the first year

1% for each extra year

The Friendly Bank

Compound Interest

5% for the first year

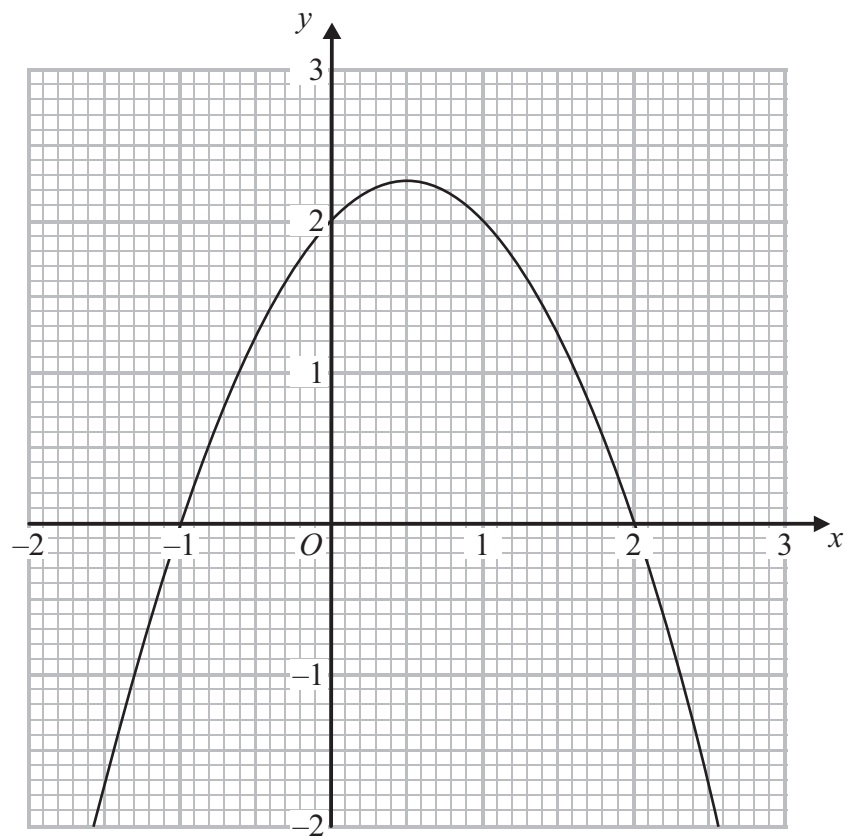
0.5% for each extra year

At the end of 2 years, Viv wants to have as much money as possible.

Which bank should she invest her £2000 in?

(Total for Question 23 is 4 marks)

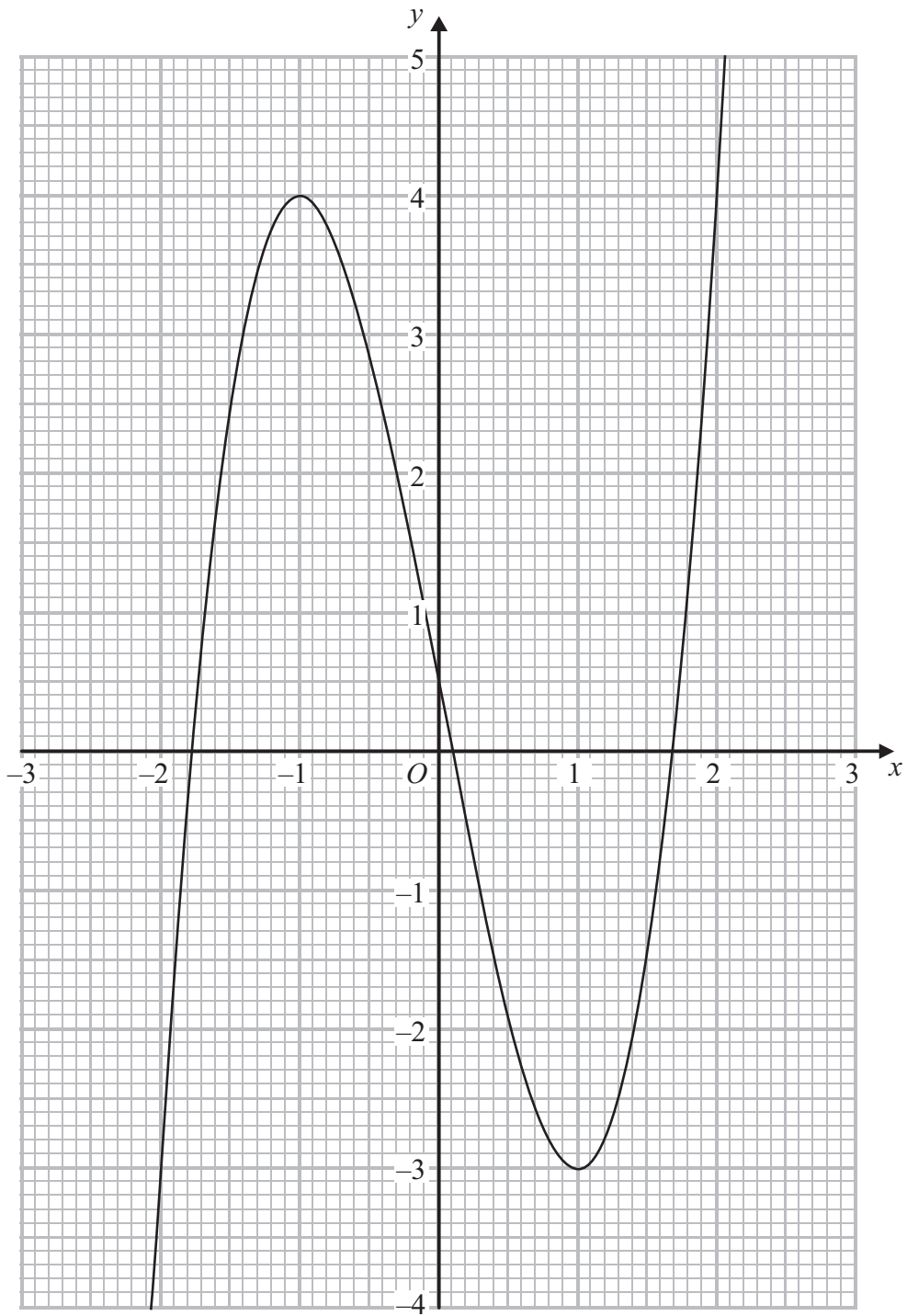
24 Here is a graph of $y = 2 + x - x^2$



- (a) (i) On the grid, draw the tangent to the curve at the point where $x = 1$
(ii) Use the graph to find estimates for the solutions of $1 + x - x^2 = 0$

(3)

Here is a cubic graph.



(b) On the graph, mark with a cross (\times) any turning points.

(1)

(Total for Question 24 is 4 marks)