Write your name here

Surname	Other names

In the style of:

Edexcel GCSE

Centre Number	Candidate Number

Mathematics A

Algebra

Foundation Tier

Past Paper Style Questions
Arranged by Topic

Paper Reference
1MA0/1F

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. 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.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- **Calculators must not be used.**

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.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed.

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.

Turn over ▶

1. Peter thinks of a number.
He multiplies the number by 3
He then adds 2

His answer is 20

(a) What number did Peter think of?

Let x = Peter's number.

Then $3x + 2 = 20$

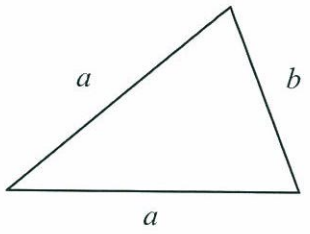
$\Rightarrow x = \frac{20-2}{3} = \frac{18}{3} = 6$

6

(2)

Sophie uses the formula $P = 2a + b$

to find the perimeter P of this triangle.



(b) Find the value of P when

$a = 6$ and $b = 4$

$P = 2(6) + 4$

$= 12 + 4$

$= 16$

$P =$ 16

(2)

(Total 4 marks)

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2. (a) Work out the value of

(i) 4^2

16

(ii) $\sqrt{64}$

8

(iii) 3×2^3

24

(3)

(b) Work out

(i) $-3 + 5$

2

(ii) $-2 - 3$

-5

(2)

(Total 5 marks)

3. The cost of hiring a car can be worked out using this rule.

Cost = £80 + 50p per mile

Bill hires a car and drives 90 miles.

(a) Work out the cost.

$C = 80 + 0.5(90)$

$= 80 + 45$

$= £125.00$

£ 125

(2)

The cost of hiring a car and driving m miles is C pounds.

(b) Complete the formula for C in terms of m.

$C =$ $80 + 0.5m$

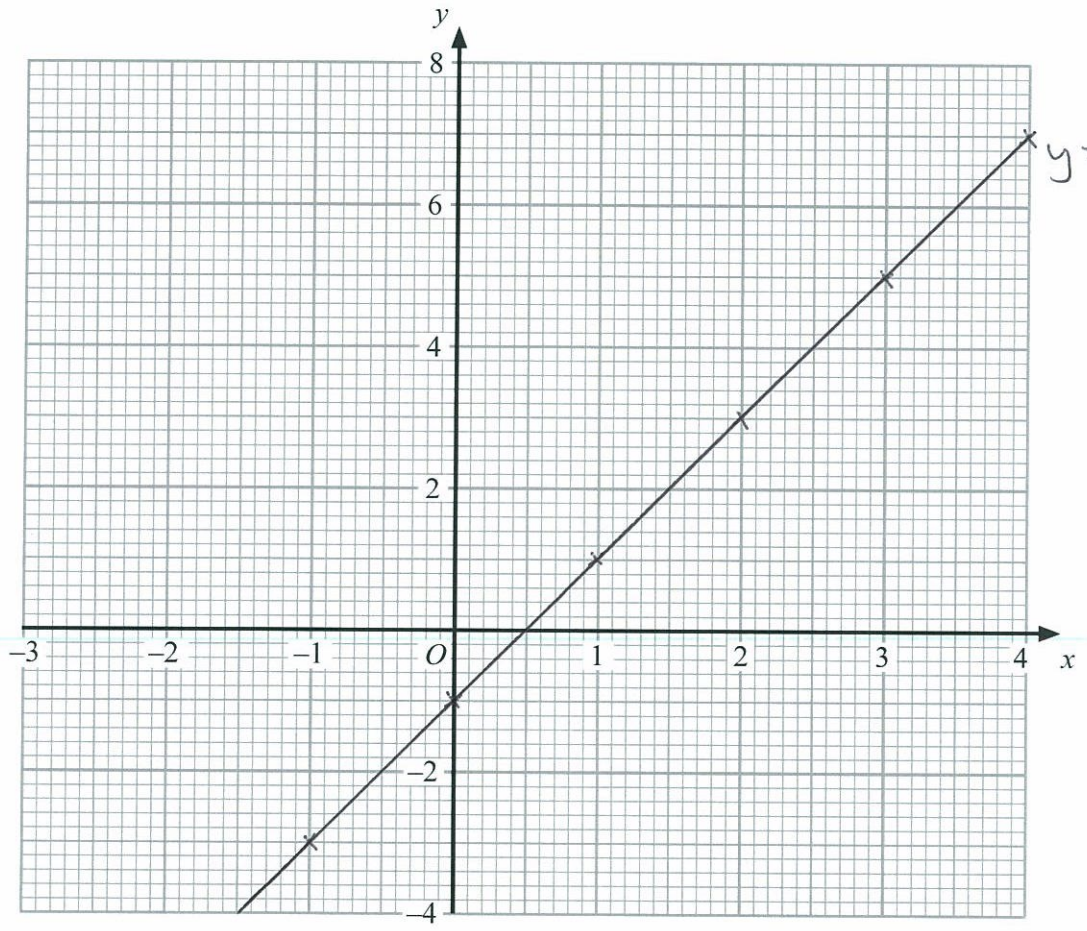
(2)

(Total 4 marks)

4. (a) Complete this table of values for $y = 2x - 1$

x	−1	0	1	2	3	4
y	−3	−1	1	3	5	7

(2)



(2)

(b) On the grid, draw the graph of $y = 2x - 1$

(Total 4 marks)

5. Work out an estimate for the value of $\frac{31 \times 4.92}{0.21}$

$\frac{30 \times 5}{0.2} = \frac{150}{0.2} \equiv \frac{150}{1/5}$

$= 150 \times 5$

$= 750$

750

(Total 3 marks)

6. (a) Expand $y(2y - 3)$

$2y^2 - 3y$

(1)

(b) Factorise $x^2 - 4x$

$x(x - 4)$

(2)

k is an integer such that $-1 \leqslant k < 3$

(c) List all the possible values of k.

$-1, 0, 1, 2$

(2)

(Total 5 marks)

7. (a) Factorise $x^2 - 5x$

$x(x-5)$

(2)

(b) Expand $3(5x - 2)$

$15x - 6$

(1)

(Total 3 marks)

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8. A hotel has 64 guests.
40 of the guests are male.

(a) Work out 40 out of 64 as a percentage.

$\frac{40}{64} \times 100 = \frac{5}{8} \times 100$

$= \frac{500}{8} = \frac{250}{4} = \frac{125}{2} = 62.5\%$

62.5 %

(2)

40% of the 40 male guests wear glasses.

(b) Write the number of male guests who wear glasses as a fraction of the 64 guests.
Give your answer in its simplest form.

$40\% \text{ of } 40 = \frac{40}{100} \times 40$

$= \frac{4}{10} \times 40$

$= 16$

$\frac{1}{4}$

(4)

(Total 6 marks)

$\frac{16}{64} = \frac{8}{32} = \frac{4}{16} = \frac{2}{8} = \frac{1}{4}$

9. (a) Simplify $8x - 4x$

$4x$

(1)

(b) Simplify $y \times y \times y$

y^3

(1)

(c) Simplify $5y + 4x - 2x + 5x$

$5y + 7x$

(2)

(Total 4 marks)

10. The two-way table gives some information about how 100 children travelled to school one day.

	Walk	Car	Bike	Total
Boy	15	25	14	54
Girl	22	8	16	46
Total	37	33	30	100

(a) Complete the two-way table.

(3)

One of the children is picked at random.

(b) Write down the probability that this child walked to school that day.

$P(W) = \frac{37}{100}$ or 0·37

$\frac{37}{100}$

.....

(1)

One of the girls is picked at random.

(c) Work out the probability that this girl did **not** walk to school that day.

P(girl picked at random did not walk) $\frac{12}{23}$

$= \frac{24}{46} = \frac{12}{23}$

.....

(2)

(Total 6 marks)

11. Apples cost a pence each

Bananas cost b pence each.

Write down an expression for the total cost, in pence, of 2 apples and 4 bananas.

$2a + 4b$

..... pence

(Total 2 marks)

15. (a) Simplify $5ab + 2ab - 4ab$

$3ab$

(1)

(b) Simplify $4a + 3b - 2a + 2b$

$2a + 5b$

(2)

(c) Simplify $n \times n \times n$

n^3

(1)

(d) Simplify $3m \times 2q$

$6mq$

(1)

(e) Factorise $5n + 10$

$5(n + 2)$

(1)

(Total 6 marks)