

Write your name here

Surname

Other names

In the style of:

Edexcel GCSE

Centre Number

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Candidate Number

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Mathematics A

Algebra

Solutions

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 number be x

$$3x + 2 = 20$$

$$3x = 20 - 2$$

$$3x = 18$$

$$x = \frac{18}{3}$$

$$x = 6$$

6

(2)

Sophie uses the formula $P = 2a + b$
to find the perimeter P of this triangle.

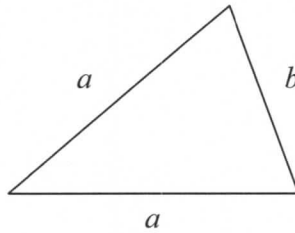
- (b) Find the value of P when

$$a = 6 \text{ and } b = 4$$

$$P = 2(6) + 4$$

$$= 12 + 4$$

$$= 16$$



$$P = \frac{16}{\dots\dots\dots}$$

(2)

(Total 4 marks)

2. (a) Work out the value of

(i) 4^2

16

(ii) $\sqrt{64}$

8

(iii) 3×2^3

$$= 3 \times 8 = 24$$

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.

$$\text{Cost} = \text{£}80 + 50\text{p per mile}$$

$$\begin{aligned} &50\text{p per mile} \\ &= \text{£}0.5 \text{ per mile} \end{aligned}$$

Bill hires a car and drives 90 miles.

(a) Work out the cost.

$$\begin{aligned} \text{Cost} &= 50 + 90 \times 0.5 \\ &= 50 + 45 \\ &= \text{£}95 \end{aligned}$$

$$\text{£ } \underline{\quad 95 \quad} \quad (2)$$

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

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

$$C = \underline{\quad 80 + 0.5m \quad} \quad (2)$$

(Total 4 marks)



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

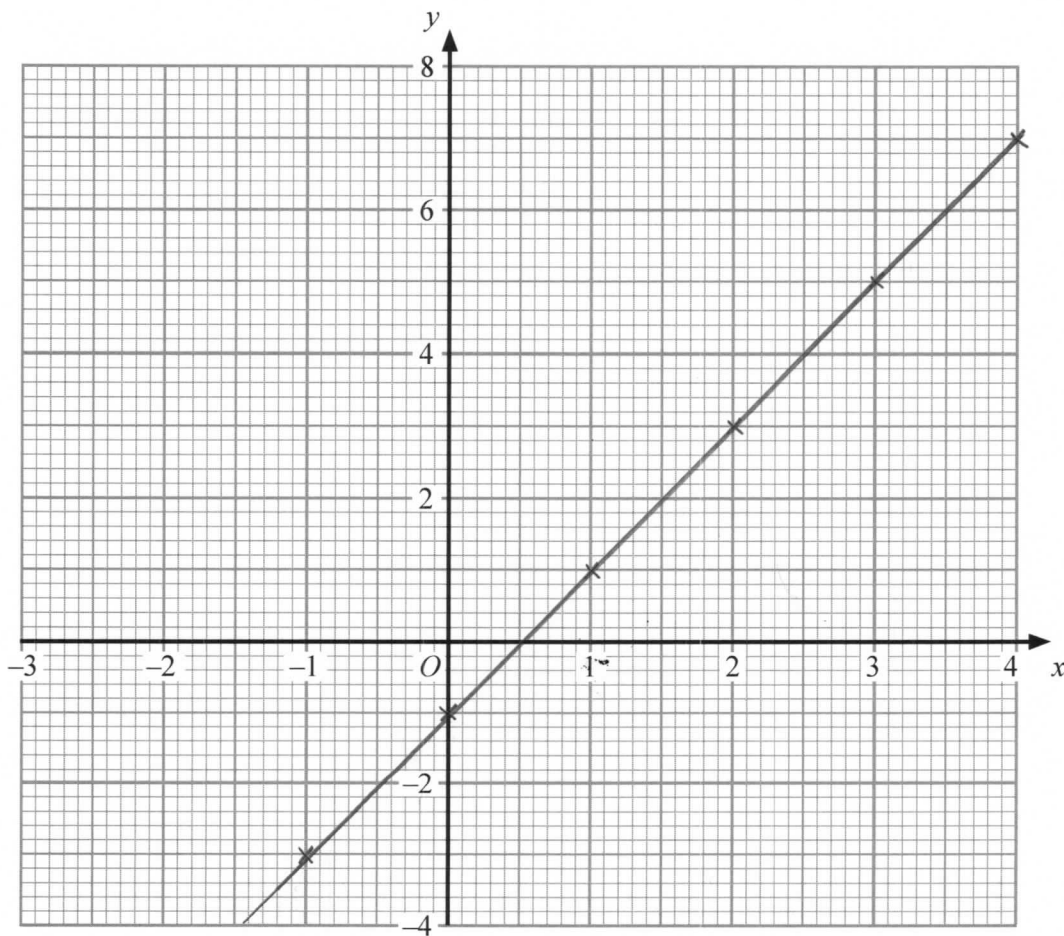
x	-1	0	1	2	3	4
y	-3	-1	1	3	5	7

$$2(-1) - 1$$

$$2(1) - 1$$

$$2(4) - 1$$

(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 $\frac{31 \times 4.92}{0.21}$

$$\approx \frac{30 \times 5}{0.2} = \frac{150}{0.2} = \frac{1500}{2} = 750$$

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 $-1 \leq k < 3$

(c) List all the possible values of k .

-1, 0, 1, 2

(2)

(Total 5 marks)



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

$$\frac{x(x-5)}{\dots\dots\dots} \quad (2)$$

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

$$\frac{15x - 6}{\dots\dots\dots} \quad (1)$$

(Total 3 marks)

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

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

$$\begin{array}{r} 5 \\ \underline{40} \\ 8 \overline{)64} \end{array} \times 100$$
$$= \frac{500}{8} = 62.5$$

$$\frac{62.5}{\dots\dots\dots} \% \quad (2)$$

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.

$$40\% \text{ of } 40 = 16$$

$$\frac{16}{64} = \frac{1}{4}$$

$$\frac{1}{4} \dots\dots\dots \quad (4)$$

(Total 6 marks)



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

$$\begin{array}{r} 4x \\ \hline \end{array} \quad (1)$$

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

$$\begin{array}{r} y^3 \\ \hline \end{array} \quad (1)$$

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

$$\begin{array}{r} 5y + 7x \\ \hline \end{array} \quad (2)$$

(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.

$$\frac{37}{100}$$

.....

(1)

One of the girls is picked at random.

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

$$\frac{24}{46}$$

.....

(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.

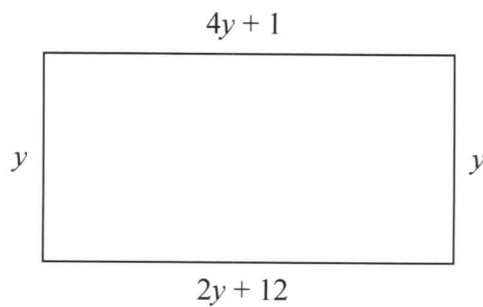
$$2a + 4b$$

..... pence

(Total 2 marks)



14.

Diagram **NOT**
accurately drawn

The diagram shows a rectangle.

All the measurements are in centimetres.

(a) Explain why $4y + 1 = 2y + 12$

Both expressions represent the length of rectangle
(1)

(b) Solve $4y + 1 = 2y + 12$

$$4y - 2y = 12 - 1$$

$$2y = 11$$

$$y = \frac{11}{2}$$

$$y = 5\frac{1}{2}$$

$$y = \text{..... } 5\frac{1}{2} \text{ or } 5.5 \text{.....}$$

(2)

(c) Use your answer to part (b) to work out the perimeter of the rectangle.

$$\text{Perimeter} = 4y + 1 + y + 2y + 12 + y$$

$$= 8y + 13$$

$$= 8(5.5) + 13$$

$$= 44 + 13$$

$$= 57$$

$$\text{..... } 57 \text{..... cm}$$

(2)

(Total 5 marks)



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

$$\frac{3ab}{\dots\dots\dots}$$

(1)

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

$$\frac{2a + 5ab}{\dots\dots\dots}$$

(2)

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

$$\frac{n^3}{\dots\dots\dots}$$

(1)

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

$$\frac{6mq}{\dots\dots\dots}$$

(1)

(e) Factorise $5n + 10$

$$\frac{5(n+2)}{\dots\dots\dots}$$

(1)

(Total 6 marks)

