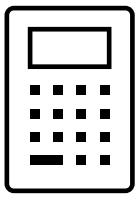
Surname:	Forename(s):

GCSE Mathematics – Foundation Tier

Paper 3 – Calculator



Practice Set C

/40

Materials

- **Formulae Sheet** (on the next page)
- **Black** ink or ball-point pen
- Pencil
- Eraser
- Protractor
- Compass
- Tracing Paper
- **Calculator allowed**

Instructions

- Time allowed: **45 minutes.**
- The total mark for this paper is **40**.
- Show **all** of your working.
- Draw diagrams in pencil.
- Plot graphs in pencil.
- Diagrams are **not** accurately drawn, unless otherwise indicated.
- Cross through any work you don't want to be marked

Foundation Tier Formulae Sheet

Perimeter, Area and Volume

Where *a* and *b* are the lengths of the parallel sides and *h* Is their perpendicular separation:

Area of a trapezium = ½ (a + b) h

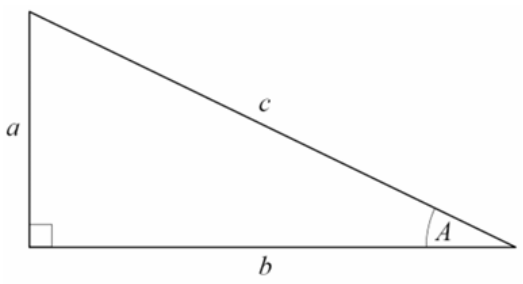
Volume of a prism = area of cross section x length

Where *r* is the radius and *d* is the diameter:

Circumference of a circle = 2πr = πd

Area of a circle = πr^2

Pythagoras' Theorem and Trigonometry



In any right-angled triangle where a, b and c are the length of the sides and c is the hypotenuse:

$$a^2 + b^2 = c^2$$

In any right-angled triangle ABC where a, b and c are the length of the sides and c is the hypotenuse:

$$\sin A = \frac{a}{c} \qquad \cos A = \frac{b}{c} \qquad \tan A = \frac{a}{b}$$

Compound Interest

Where *P* is the principal amount, *r* is the interest rate over a given period and *n* is number of times that the interest is compounded:

$$\text{Total accrued} = P\left(1 + \frac{r}{100}\right)^n$$

Probability

Where P (*A*) is the probability of outcome *A*

and P (*B*) is the probability of outcome *B*:

P (*A* or *B*) = P (*A*) + P (*B*) – P (*A* and *B*)

P (*A* and *B*) = P (*A* given *B*) P(*B*)

1 Write down an even number that is also a square number

_____

(Total for question 1 is 1 mark)

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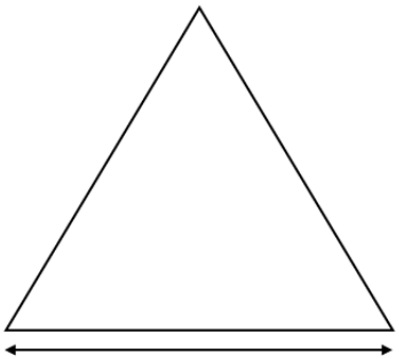
2 Here is a diagram of an equilateral triangle.



Work out the perimeter of the triangle.

_____ cm

(Total for question 2 is 1 mark)

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3 (a) Simplify 5m – m – 3m + m

_____

(1)

(b) Simplify 6 x p x r x 3

_____

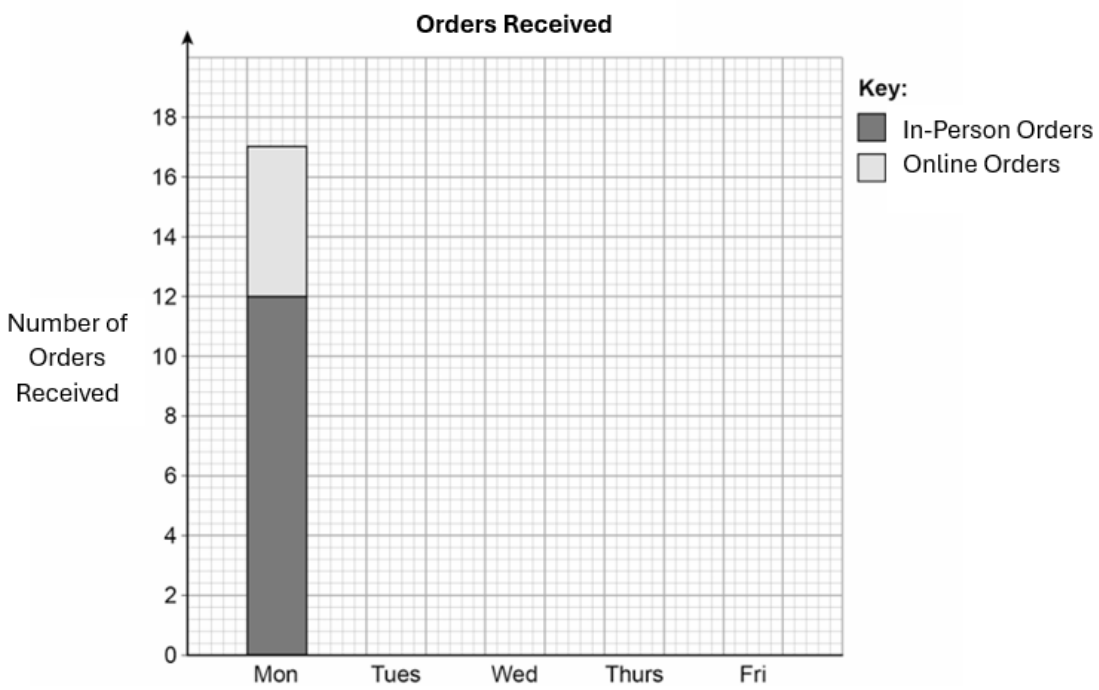
(1)

Total for question 3 is 2 marks)

4 The table shows some information about the number of orders that Dan's shop received each day last week.

	Orders Received	
	In-Person Orders	Online Orders
Monday		
Tuesday	5	10
Wednesday	7	11
Thursday	8	5
Friday	5	6

Dan draws a composite bar chart to represent this data.



(a) Complete the table. (1)

(b) Complete the composite bar chart (2)

(c) What fraction of the orders last week were online orders?
Give your answer in its simplest form.

_____

(3)

Total for question 4 is 6 marks)

5 There are managers and workers in a meeting room.
There are 54 managers.
70% of the people in the meeting are workers.
Work out the total number of people in the meeting.

_____ people

(Total for question 5 is 3 marks)

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6 A car travels 28.6 miles in 33 minutes.
Work out the averages speed in the car in miles per hour.

_____ mph

Total for question 6 is 3 marks)

7 Bread rolls and pastries are sold in a bakery.
11 bread rolls cost £2.64
The ratio of the cost of a bread roll to the cost of a pastry is 4 : 9
Work out the cost of 6 pastries

£ _____

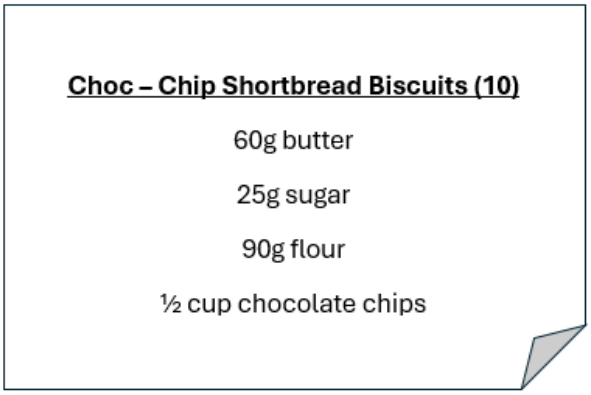
(Total for question 7 is 4 marks)

8 Write down the gradient of the line with equation y = - 3x - 5

_____

Total for question 8 is 1 mark)

9 Here is the list of ingredients to make 10 chocolate chip shortbread biscuits.



Nina wants to make 75 biscuits for her friends party.

Nina already has a 200g stick of butter and half a kilogram of flour.

Work out how much of each ingredient that Nina will need to buy.

_____ g butter

_____ g sugar

_____ g flour

_____ cups chocolate chips

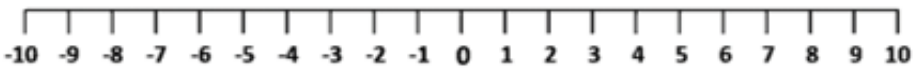
(Total for question 9 is 4 marks)

10 (a) Solve $3x > 6$

_____

(1)

(b) On the number line below, show the inequality $3x > 6$



(2)

(c) Solve $4x + 3 = 3(2x - 5)$

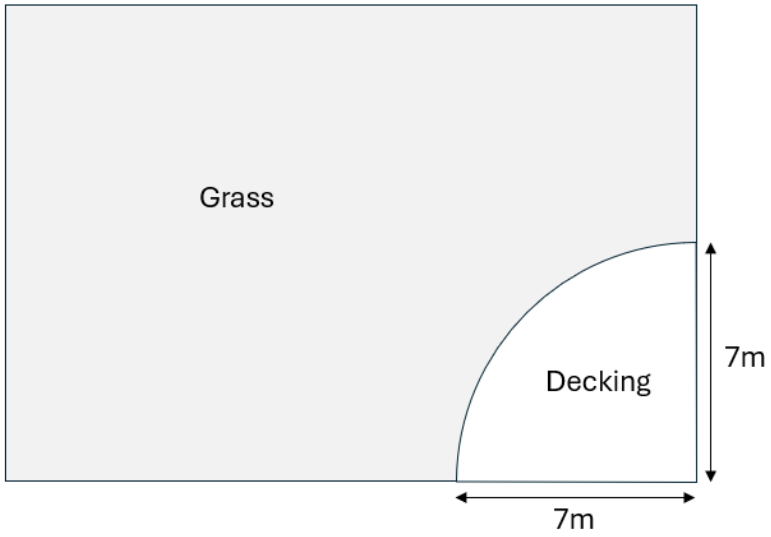
$x =$ _____

(3)

(Total for question 10 is 6 marks)

11 Bernie has a rectangular garden which has a width of 15m and a length of 27.5m.
He builds a decking in the shape of a quarter circle with radius 7m.

The rest of the garden needs to be covered in grass seeds.
1 box of grass seed covers 60 square metres.
Work out how many boxes of grass seed Bernie will need to buy.



_____ boxes

(Total for question 11 is 4 marks)

12 Work out $\frac{8.82 \times 10^9}{3.6 \times 10^4}$

Give your answer in standard form.

_____

(Total for question 12 is 2 marks)

13 In London, potatoes cost 49p per lb.
In Paris, potatoes cost €1.29 per kg.

£1 = €1.15
1kg = 2.2lbs

In which city are potatoes better value for money?
You must show your working.

_____

(Total for question 13 is 3 marks)

END OF TEST

TOTAL FOR THIS PAPER IS 40 MARKS