

Name: _____

GCSE Maths 2022
AQA Foundation Paper 2
Set B
Calculator



Equipment

1. A black ink ball-point pen.
2. A pencil.
3. An eraser.
4. A ruler.
5. A pair of compasses.
6. A protractor.

Guidance

1. Read each question carefully.
2. Check your answers seem right.
3. Always show your workings

Information

1. This paper has been created based on topics in the Advance Information.
2. Also see Corbettmaths for the checklist for the entire GCSE as these topics may still be useful for Paper 2
3. There is one question per topic - this paper is designed to give an opportunity to practice each topic rather than replicate the actual paper.
4. The marks for questions are shown in brackets

[GCSE 2022 Resources](#)



1. Put brackets into the calculation below to make it true.

$$6 \times 7 + 3 - 8 = 52$$

(1)

2. Write these numbers in order of size.
Start with the smallest number.

0.92

0.901

0.99

0.099

0.909

.....
(1)

3. Write down all the prime numbers between 10 and 20.

.....
(2)

4. 729 is both a square number and a cube number.

Find two other numbers that are both square numbers and cube numbers.

..... and
(2)

5. Work out $\frac{7}{20}$ of 860

.....
(1)

6. Complete the table.

Fraction	Decimal	Percentage
$\frac{7}{100}$	0.07	
	0.35	35%
$\frac{3}{5}$		60%

(3)

7. Write $\frac{11}{3}$ as a mixed number.

.....
(1)

8. Martina sat two maths tests.

Paper 1 has 60 marks.

Paper 2 has 150 marks

Martina scored 65% in Paper 1 and 36% in Paper 2.

Her teacher has said to pass she will need to score 45% of the total marks.

Did Martina pass?

You need to show your working.

.....
(4)

9. ABCD is a rectangle with length 40cm and width 10cm.



The length of the rectangle is decreased by 40%.
The width of the rectangle is decreased by 30%

Find the percentage decrease in the perimeter of the rectangle.

.....%
(2)

10. The value of a car decreases by 7.2% each year.
When bought the car cost £6200.

(a) Work out how much the car will be worth after one year.

£.....
(2)

(b) How many years will it take the car to have a value less than £4000?

.....years
(2)

11. Felicity has two boxes of counters, each with an equal ratio of black and white beads.

In box A, 54 of the beads are black and 36 are white.
There are 162 white beads in box B.

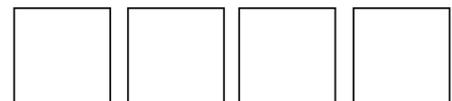
How many beads are there in the two boxes in total?

.....
(4)

12. Here are four number cards.



Use each digit once to make the largest **even** number

Four empty square boxes are arranged horizontally, intended for the student to write the digits of the largest even number.

(1)

13. Chloe bought 2 litres of lemonade for £1.50
She sells 250ml glasses of lemonade for 40p each.
Chloe sells all the lemonade.

Work out her profit

.....
(3)

14. Bramley apples cost £4.60 for a 3kg bag at Supervalue supermarket.
The same type of apples cost £11.40 for a 7.5kg bag at Nixon's supermarket.

Where are the apples the best value for value?
You must show your working.

(4)

15. Rebecca is making Chilli Con Carne.
Here is a list of ingredients to serve 6 people.

serves 6

1.2kg mince

420g tomatoes

3 chillies

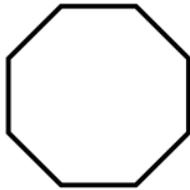
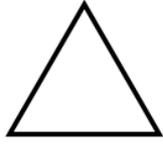
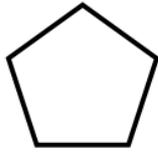
600g kidney beans

Rebecca wants to make enough Chilli Con Carne for 4 people.

How many grams of tomatoes should Rebecca use?

.....g
(3)

16. Below is a list of shapes and their names.



Pentagon

Octagon

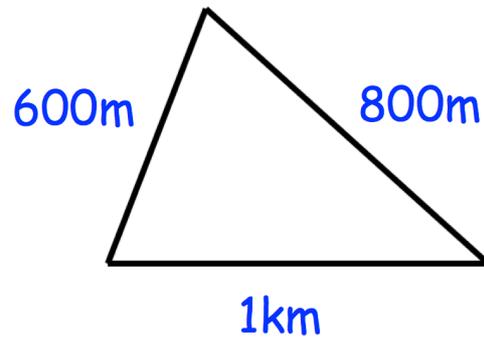
Heptagon

Triangle

Match each shape to the correct name.

(4)

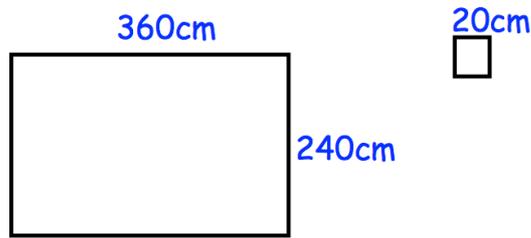
17.



Using the scale of $1\text{cm} = 200\text{m}$, construct a scale drawing of the triangle shown.

(4)

18. Mrs Rodgers is tiling her bathroom wall.
The bathroom wall is 360cm long and 240cm high.
Each tile is 20cm by 20cm



The tiles are sold in boxes of 6.
Each box costs £8.
How much will it cost Mrs Rodgers to buy enough tiles for her bathroom wall?

£.....
(4)

-
19. Olivia does her Maths, French and History homework
It takes her a total of three hours.

She spends 70 minutes on her History homework.
Olivia spends 15 minutes less on her Maths homework than her History homework.

How many minutes does Olivia spend doing her French homework?

.....
(3)

20. Here is part of a train timetable.

	Departure times			
Antrim	12:30	13:00	14:00	16:00
Randalstown	12:45	13:15	14:15	16:15
Ballymena	13:01	13:31	14:31	16:31
Ballycastle	13:39	14:09	15:09	17:09

Freddy wants to travel from Randalstown to Ballycastle.
He arrives at Randalstown at 13:03 to catch the next train to Ballycastle.

(a) How long does this train journey take?

.....minutes
(2)

Jennifer lives in Antrim and her friend lives in Ballymena.

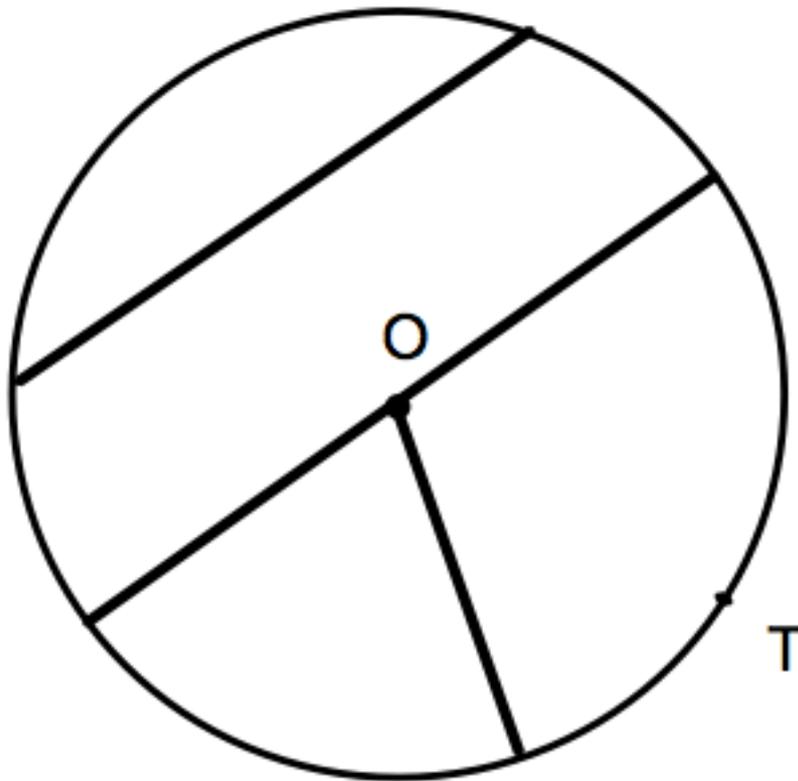
Jennifer lives a 5 minute walk from Antrim train station.
Her friend lives a 30 minute walk from Ballymena train station.

Jennifer wants to arrive at her friend's house **before** 3pm.

Plan Jennifer's journey to her friend's house.

(5)

21. In the diagram below, O is the centre of the circle.



(a) Mark on the diagram with arrows (\gg) a pair of parallel lines.

(1)

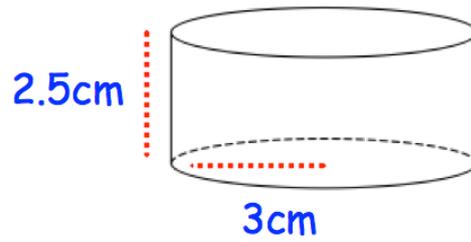
(b) Shade on the diagram a segment of the circle.

(1)

(c) Draw a tangent to the circle at T.

(1)

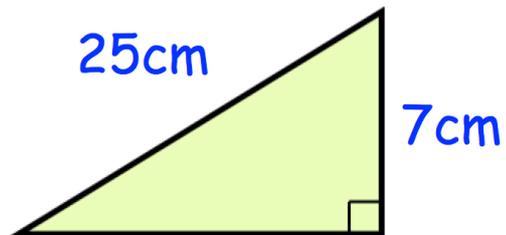
22.



Calculate the volume of the cylinder.
State the units of your answer.

.....
(4)

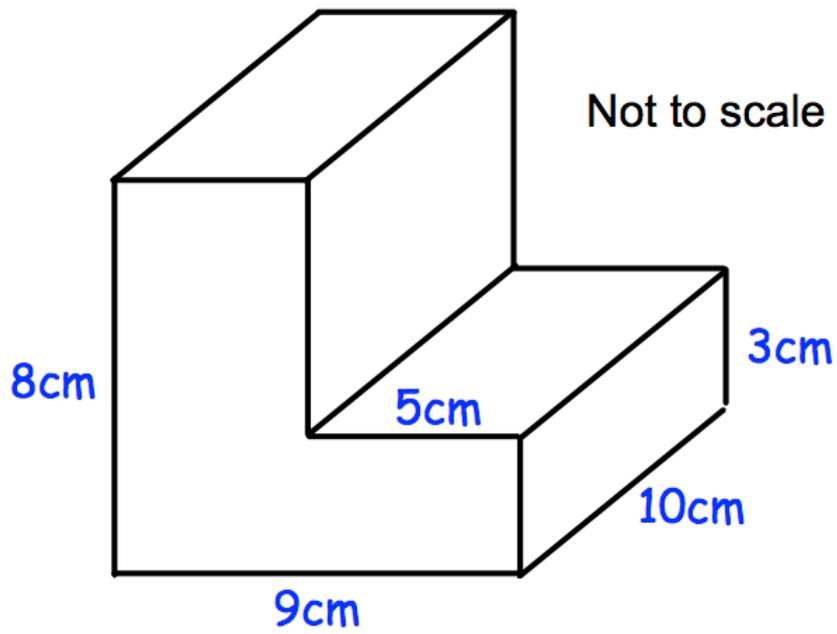
23. Here is a right angle triangle.



Calculate the area of the triangle.

.....cm²
(5)

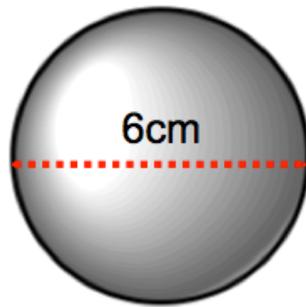
24. The diagram shows a prism.



Work out the volume of the prism.

.....cm³
(4)

25. Shown is a sphere with diameter 6cm.



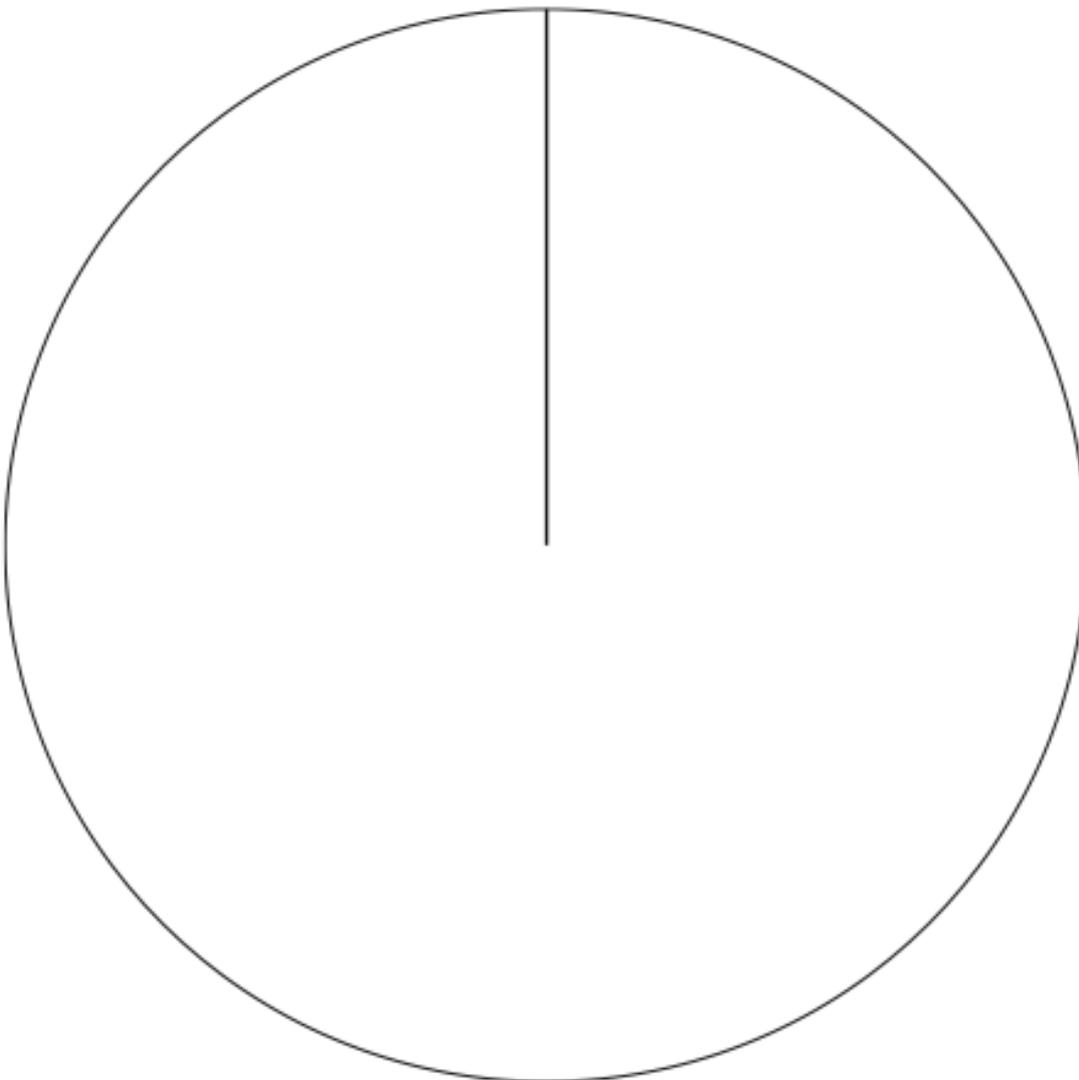
Calculate the volume of the sphere.

.....cm³
(3)

26. The table gives information about the grades student got in a test.

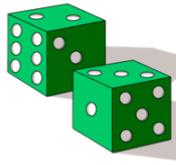
Grade	Frequency
A	10
B	15
C	13
D	5
E	2

Draw an accurate pie chart to show this information.



(4)

27. Two fair six sided dice are rolled.



The numbers on the two dice are **multiplied** together to give a score.

(a) Complete the table to show all possible scores.

		Dice 1					
		1	2	3	4	5	6
Dice 2	1						
	2						
	3						
	4						
	5						
	6						

(2)

(b) Find the probability of a score of 12

.....
(1)

(c) Find the probability of a score of 10 or more

.....
(2)

(d) Find the probability of an even number

.....
(2)

28. A spinner has four sections, each labelled A, B, C and D. Susan and Helen spins the spinner a number of times. The table shows some information.

	Number of spins	Number of B's	Relative frequency of spinning a B
Susan	20	8	
Helen	120		0.35

Complete the table.

(2)

29. Here are the ages of 9 children at a birthday party.

10 12 13 10 11 14 15 10 12

- (a) Find the mode.

.....
(1)

- (b) Find out the median.

.....
(2)

- (c) Work out the range.

.....
(2)

- (d) Work out the mean.

.....
(2)

30. There are 20 students in Class 1 and 30 students in Class 2.
All 50 students sit a test.

The mean score for the students in Class 1 was 60%

The mean score for the students in Class 2 was 80%

Find the mean score of all the students.

.....
(3)

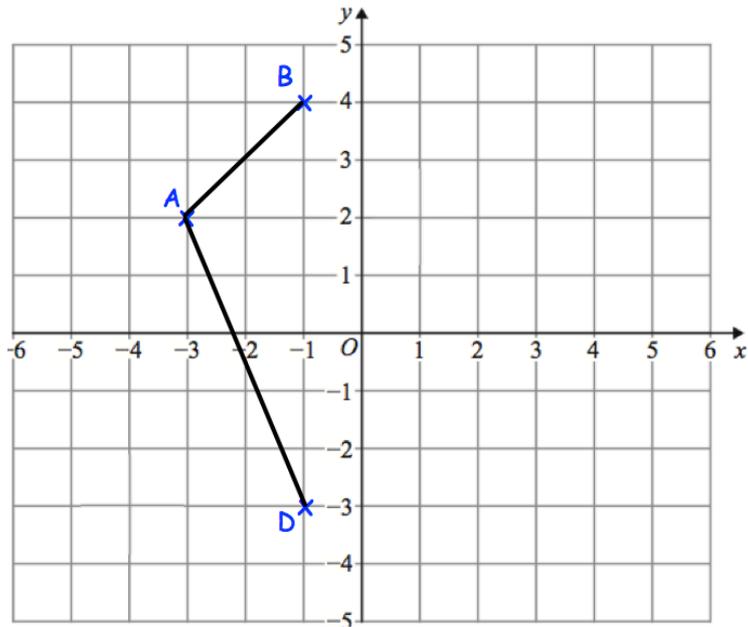
31. The table below shows the heights of a group of students.

Height	Frequency
$120 < h \leq 130$	51
$130 < h \leq 140$	120
$140 < h \leq 150$	66
$150 < h \leq 160$	59
$160 < h \leq 170$	4

Calculate an estimate of the mean height.

.....
(4)

33. The points A (-3, 2), B (-1, 4) and D (-1, -3).



ABCD is a kite.

Complete the kite and write down the coordinates of C.

(.....,)
(2)

34. Simplify $2c - 3y + c + 5y$

.....
(2)

35. Simplify $8y \times 3x$

.....
(1)

36. Expand $4x(3x - 7)$

.....
(2)

37. Factorise fully

$$9m^2 - 12mp$$

.....
(2)

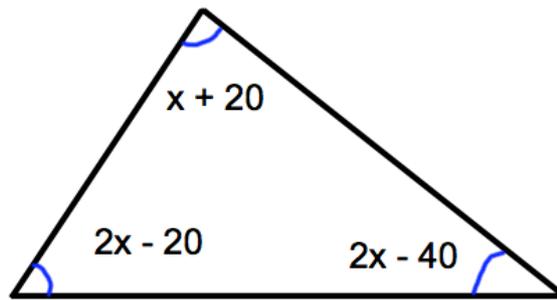
38. Factorise $x^2 - 9x + 20$

.....
(2)

39. Solve $7w + 3 = 5w + 9$

$w =$
(2)

40. Shown is a triangle.



Work out the value of x .

$x = \dots\dots\dots^0$
(4)

41. Put the correct inequality sign in each box.
The first box has been completed for you.

5.1	<input checked="" type="checkbox"/>	5.3
0.4	<input type="checkbox"/>	0.14
0.653	<input type="checkbox"/>	0.7
0.1	<input type="checkbox"/>	0.09

(3)

42. A line has equation $y = 3x + 4$

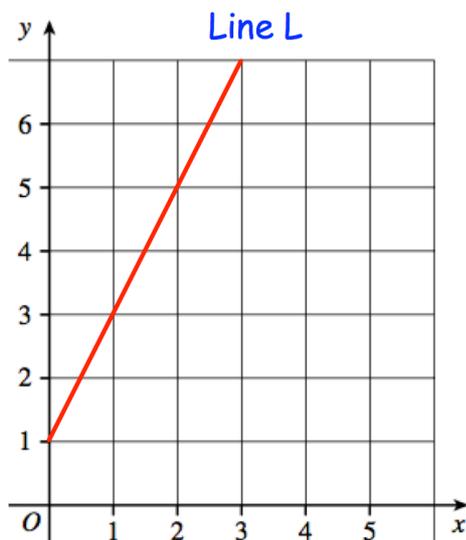
(a) Write down the gradient of the line

.....
(1)

(b) Write down the y-intercept of the line

.....
(1)

43.



Line L is drawn on the grid.

Work out the gradient of Line L.

.....
(2)