Name:

GCSE Maths 2022
AQA Foundation Paper 3
Set A
Calculator

Corbettmaths

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 3
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. List all the multiples of 13 between 30 and 60.

.....

(1)

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2. Emily thinks of two numbers.
The highest common factor (HCF) of the two numbers is 1.
The lowest common multiple (LCM) of the two numbers is a multiple of 40.

Write down two possible numbers that Emily could be thinking of.

……

(1)

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3. Work out 0.7^3

……

(1)

4. Circle the value of 2^{-3}

-6 $\frac{1}{8}$ -8 $\frac{1}{6}$

(1)

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5. (a) Write $\frac{15}{16}$ as a percentage.

.....%

(1)

(b) Write $\frac{9}{55}$ as a percentage.

.....%

(1)

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6. Edward and his four friends go on holiday.
The total cost of the holiday is £3600.

Edward is going to stay longer than his friends and he is going to pay 35% of the total cost.
The rest of the total cost is to be shared equally between his four friends.

Edward says,

"*I pay twice as much money for the holiday than each of my friends.*"

Is Edward correct?
Explain your answer.

(4)

7. Priya bought a house for £80000.
She sold the house for £122400.

Work out the percentage profit.

……..%

(2)

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8. A car was bought for £18000.
Its value depreciated by 15% each year for the first three years.

What was its value at the end of the three years?

£.....

(3)

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9. At a rugby match, the ratio of children to adults is 2 : 3
There are 80 children in the crowd.
Each adult ticket costs £8
Each child ticket costs a quarter of the adult ticket.

Work out the total money made from ticket sales.

£.....

(4)

10. Arrange these numbers in order of size, starting with the smallest.

one billion
half a million
six hundred and ten thousand
ninety seven thousand
two million

smallest.....

.....

.....

.....

largest.....

(2)

---

11. Frank rounds a number, y, to the nearest ten.
His result is 80
Write down the error interval for y

……..

(2)

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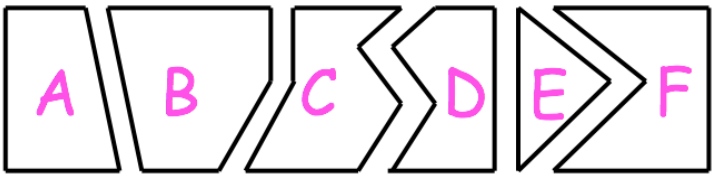
12. Leah bought a new car costing £18,000
She paid a deposit of £2,000.
Leah paid the rest of the money over 25 equal monthly payments.

How much was each monthly payment?

£.....

(2)

13. Here are six shapes

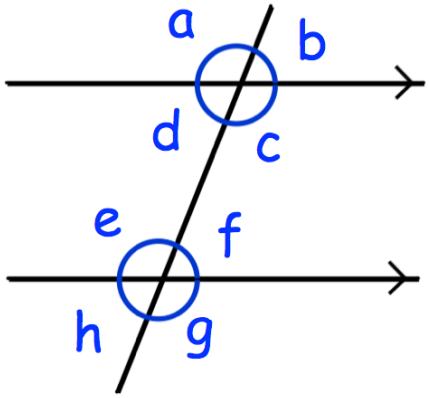


Write the letters of the shapes that are pentagons

.....

(2)

14.

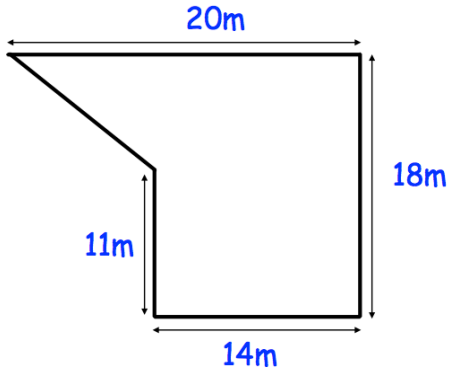


Which angle is alternate to angle *d* ?

.....

(1)

15. Shown is the plan of a small field.



Thomas is going to keep some chickens in the field.
Each chicken needs 5m².

Work out the greatest number of chickens Thomas can keep in the field.

.....

(5)

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16. (a) Convert 0.2 m² into cm²

..... cm²

(1)

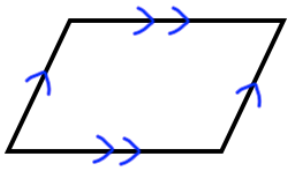
The mass of a 2p coin is 7g.

(b) Find the mass of £6 worth of 2p coins.
Give your answer in kilograms.

.....kilograms

(3)

17. A quadrilateral is drawn below.
It has two pairs of parallel sides.



(a) Write down the name of this quadrilateral.

.....

(1)

(b) How many lines of symmetry does the shape have?

.....

(1)

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18. Sketch a quadrilateral with order of rotational symmetry, 2.

(1)

19. The timetable for a flight from London to Beijing is shown.

Departure from London	5 August	20:25
Arrival in Beijing	6 August	13:10

When it is 1pm in London, it is 8pm in Beijing.

How long should the journey take?
Give your answer in hours and minutes.

Show your working.

.....hours.....minutes
(3)

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20. A car travels 210 kilometres in 3 hours 30 minutes

Calculate the average speed, in km/h, of the car.

.....km/h
(3)

21. Draw a circle with a diameter of 11cm.

(2)

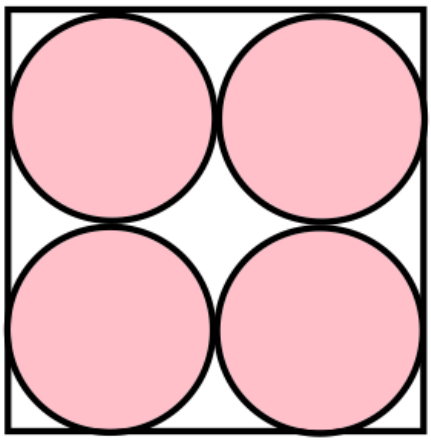
22. A circular wheel has a diameter of 30cm.
The wheel rolls a distance of 60m.

Calculate the number of complete revolutions completed.

.....

(4)

23. A logo is designed that has four pink circles within a white square.



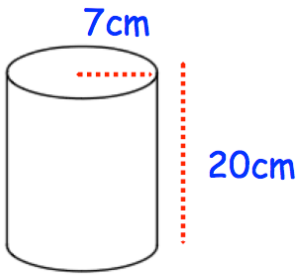
The square has side length 16cm.

Find the area of the logo that is white.

.....cm²

(5)

24.



Each flowerpot is a cylinder with radius 7cm and height 20cm.
Carl has 50 litres of soil.

How many flowerpots can be filled?

.....

(4)

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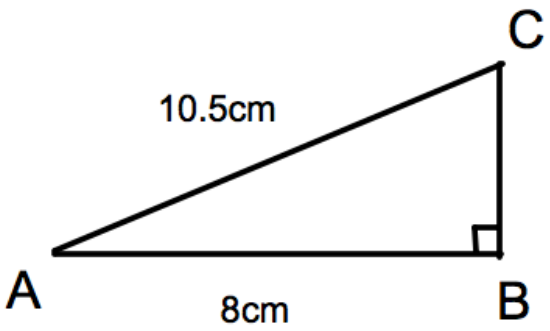
25. ABC is a right-angled triangle.

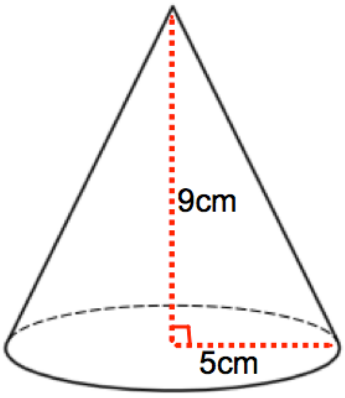


Calculate the size of angle ACB.

.....°

(3)

26. A cone has base radius 5cm and perpendicular height 9cm.



Work out the volume of the cone.

.....cm³

(3)

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27. $\mathbf{a} = \begin{pmatrix} 2 \\ 0 \end{pmatrix}$ and $\mathbf{b} = \begin{pmatrix} 1 \\ 5 \end{pmatrix}$

Work out $4\mathbf{a} + 2\mathbf{b}$

$\begin{pmatrix} \cdots \\ \cdots \end{pmatrix}$

(2)

28. The perimeter of a parallelogram is 17cm.
The length of each long side is 5cm.

Work out the length of each short side.

.....cm
(2)

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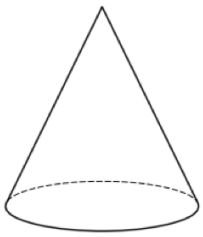
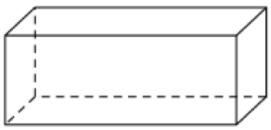
29. Shown is a solid shape.



(a) What is the mathematical name for the shape?

.....
(1)



The shape above is a cuboid.

(b) How many faces does a cuboid have?

.....
(1)

(c) How many edges does a cuboid have?

.....
(1)

(d) How many vertices does a cuboid have?

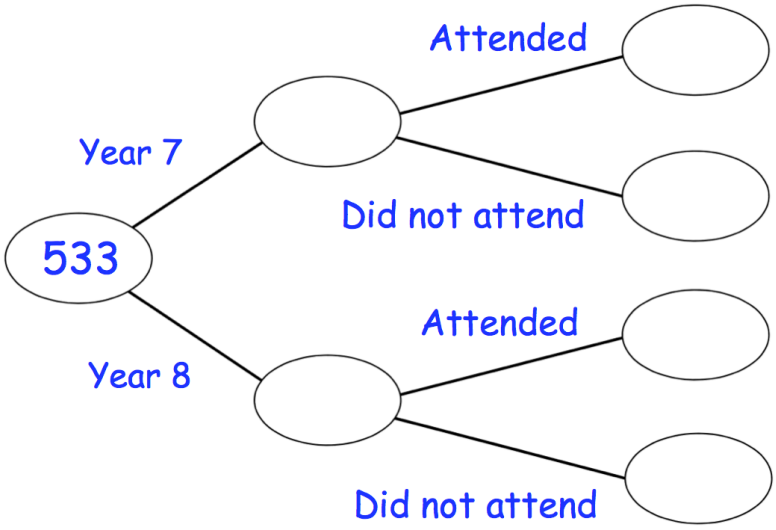
.....
(1)

30. In a secondary school, there are 533 students altogether in Years 7 and 8. There are 255 students in Year 8.

The PE department run football training after school on a Thursday for Year 7 and 8 students.

85 of the 165 students that attended football training are in Year 7.

(a) Complete the frequency tree.



(2)

(b) What fraction of Year 8 students attended football training.

.....

(2)

31. On a particular day, 98 people visit a leisure centre.

Some are going to the gym.
Some are going to play tennis.
Some are going to play badminton.
The rest are going swimming.

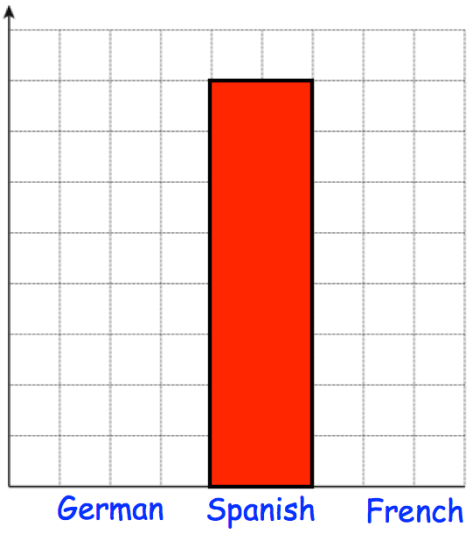
51 of the people are adults.
21 out of the 40 going to the gym are adults.
19 adults and 7 children are going swimming.
7 out of the 20 people playing badminton are adults.
Twice as many children play tennis than adults.

How many children play tennis?

.....

(2)

32. Miss Jackson asked the 32 students in her tutor group which language they study.
Each student studies one language only.



Half of the students in the tutor group study Spanish.
Six more students study German than French.

Complete the bar chart.

(4)

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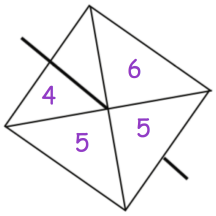
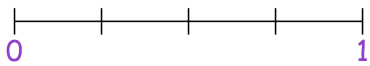
33. A fair 4-sided spinner is spun once.



(a) On the probability scale, mark with a letter A, the probability that the spinner will land on the number 4.



(1)

(b) Write down the probability that the spinner will land on a number less than 6

.....

(1)

34. A set of six numbers have a median of 5.
All of the numbers are even.
The range of the numbers is 6.
The mode of the numbers is 4.

Write down a possible set of six numbers.

....., ..., ..., ..., ... and .....

(4)

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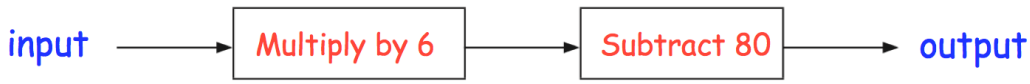
35. This function machine multiplies a number by 6 and then subtracts 80.



The input is the same as the output.
Find the input.

.....

(3)

36. (a) Simplify 13a + 2c – 9c + 3a

.....

(2)

(b) Simplify 6a + 7w – 5a – 9w

.....

(2)

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37. Simplify

(a) $y \times 4$

.....

(1)

(b) $2 \times w \times 3w$

.....

(1)

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38. Here are the first four terms of a number sequence.

7 10 13 16

Work out the difference between the 10th term and 15th term in the sequence.

.....

(2)

39. Which of the following sequences is a geometric progression?

Circle your answer

2 6 10 14 2 6 18 54

2 6 8 14 2 6 11 17

(1)

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40. The first 5 terms in a number sequence are

10 7 4 1 -2 ... ...

(a) Work out the *n*th term of the sequence.

.....

(2)

(b) Find the 50th term of the sequence.

.....

(2)

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41. Given that $x = -6$ and $y = -2$

Work out the value of $x^2 + 3y$

.....

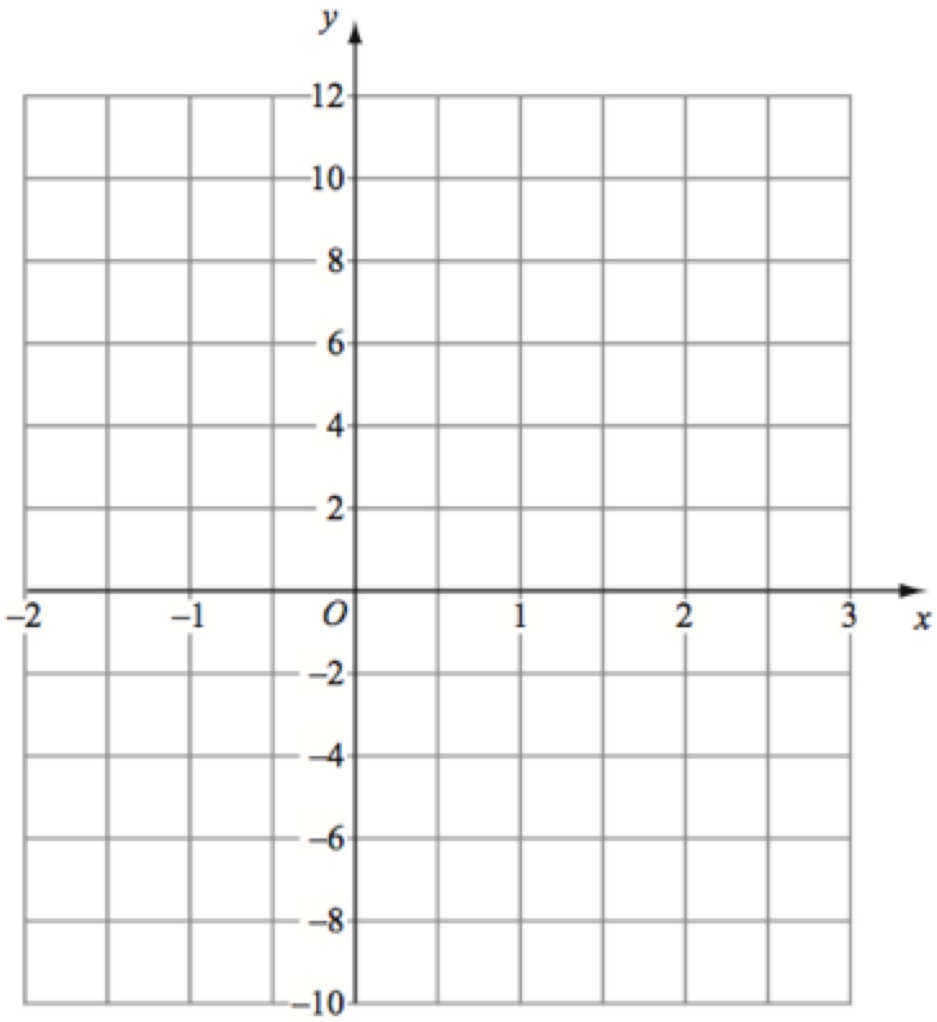
(2)

42. (a) Complete the table of values for $y = x^2 + x - 4$

x	-2	-1	0	1	2	3
y						

(2)

(b) On the grid, draw the graph of $y = x^2 + x - 4$ for the values of x from -2 to 3.



(2)

43. Express v in terms of t

$$t = \frac{v}{4} + 1$$

v = ...

(2)

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44. From the list of numbers

3 5 7 9 11 15 24

(a) Write down a factor of 12

.....

(1)

(b) Write down a factor of 28

.....

(1)

(c) Write down a factor of 81

.....

(1)