1st Class Maths

PREDICTED PAPER

Video Solutions

Centre Number | | | | | | Candidate Number | | | | |

Surname _____

Forename(s) _____

Signature _____

GCSE
MATHEMATICS

F

Foundation Tier Paper 2 Calculator Allowed

Thursday 3 November 2022 Morning Time allowed: 1 hour 30 minutes

Student Self Reflection

Topics/Question I need to ***revise***

Topics/Questions I need to ***learn***

For teacher use	
Pages	Mark
2-3	
4-5	
6-7	
8-9	
10-11	
12-13	
14-15	
16-17	
18-19	
20-21	
TOTAL	

Do not write outside the box

Answer **all** questions in the spaces provided.

1 Circle the multiple of 10 **[1 mark]**

0.1 1 5 20

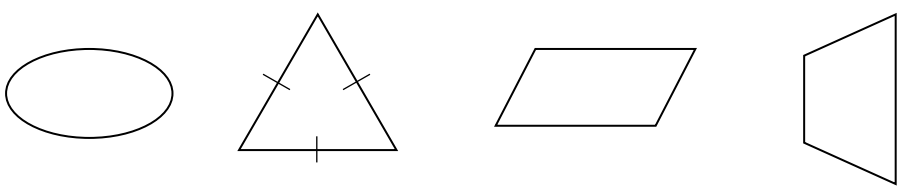
2 Circle the value of the digit 3 in 4.235 **[1 mark]**

$\frac{1}{3}$ $\frac{3}{10}$ $\frac{1}{30}$ $\frac{3}{100}$

3 Which of the shapes has only **one** line of symmetry?

Circle the correct letter. **[1 mark]**

A **B** **C** **D**



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4 Circle the value of 5^4 **[1 mark]**

20 54 125 625

5 (a) Write the following units in order of size.
Start with the smallest. **[1 mark]**

metres millimetres kilometres centimetres

Answer _____

5 (b) Write a suitable unit for measuring each amount. **[2 marks]**
One has been done for you

	Unit
Length of a football pitch	metres
Amount of water in a bath	
Mass of a suitcase full of luggage	

7

Do not write outside the box

6 Torie collects toy cars of different colours.

The pictogram shows the number of toy cars that she has that she has that are red and that are green.

Key: ☐ represents 4 toy cars

Red	☐ ☐ ▯
Blue	
Yellow	

6 (a) How many red cards does Torie have? **[1 mark]**

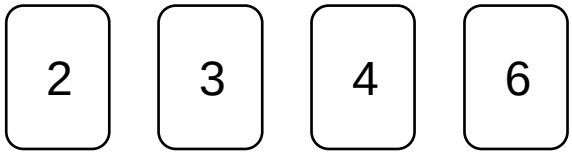
Answer _____

Torie has 5 blue toy cars.
In total Torie has 21 toy cars.

6 (b) Use this information to complete the pictogram. **[2 marks]**

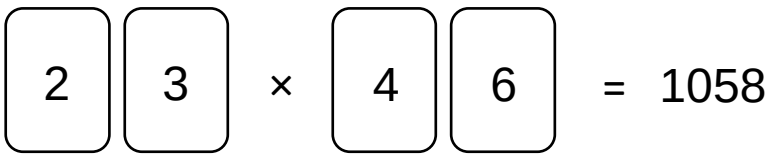
Do not write outside the box

7 Here are four numbered cards.



Sophia uses each card once to make two, 2-digit numbers.
She then **multiplies** the numbers together.

Sophia arranges the numbers in the following way.



Sophia says: *"1058 is the smallest possible answer that I can get from multiplying two 2-digit numbers using these cards"*

7 (a) By finding a lower possible answer, show that Sophia is wrong. **[1 mark]**

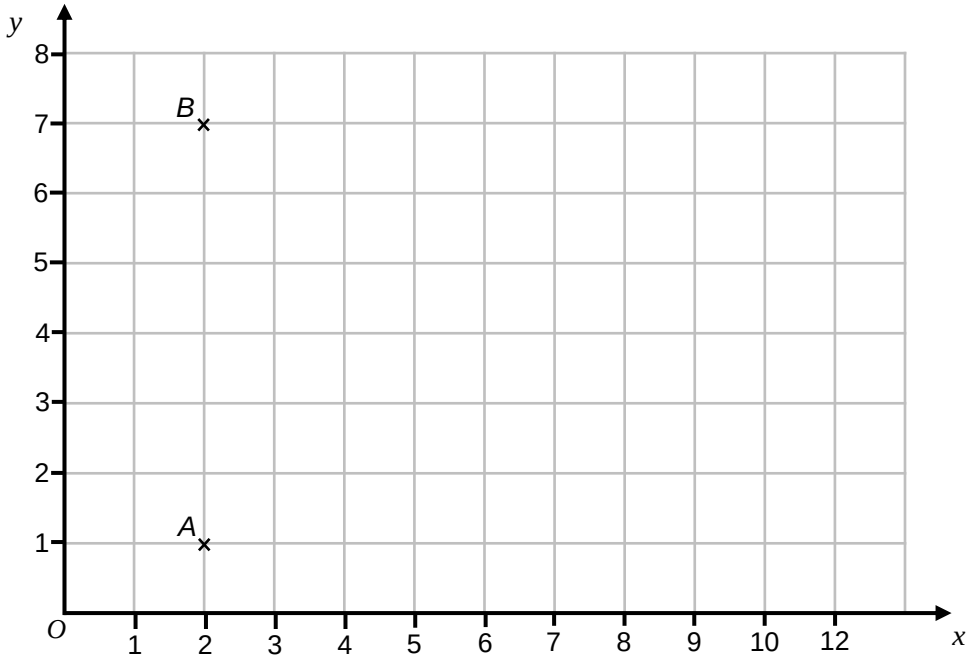
7 (b) Write down the lowest possible answer that Sophia could have made. **[1 mark]**

Answer _____

5

Do not write outside the box

8



8 (a) Write down the coordinates of point *A*. **[1 mark]**

Answer (_____ , _____)

8 (b) Point *C* has coordinates (7, 4) **[1 mark]**

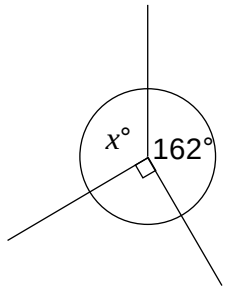
Mark point C onto the grid above.

8 (c) What type of triangle is made by connecting points *A*, *B* and *C*? **[1 mark]**
Circle your answer.

Isosceles Scalene Equilateral Right angled

Do not write outside the box

9 Work out the size of angle x. **[3 marks]**



x = ____ °

10 The radius, chord, diameter and circumference are all parts of a circle, C.

Tick the correct box for each statement below. **[3 marks]**

	Always true	Sometimes true	Never true
The radius of C is longer than the diameter of C.	☐	☐	☐
The circumference of C is longer than the diameter of C.	☐	☐	☐
A chord of C is longer than the radius of C.	☐	☐	☐

9

Do not write outside the box

11 Toby adds some fractions. His working out is shown below.

$$\frac{1}{5} + \frac{3}{8}$$

$$= \frac{8}{40} + \frac{5}{40}$$

$$= \frac{13}{40}$$

Explain the mistake that Toby has made. **[1 mark]**

12 $m = -9$ **[1 mark]**

Circle the value of m^2

-3 3 -81 81

Do not write outside the box

13 An energy company charges customers according to the following table.
Customers pay a fixed daily charge plus a cost for each unit of energy used.

	Daily Charge	Cost per Unit
Electricity	14p	34p
Gas	8p	10.3p

The table below shows Gill's energy use for three months.

	Month 1	Month 2	Month 3
Electricity (units used)	350	360	320
Gas (units used)	612	718	942

Each of the months has 31 days.
Work out the total cost of Gill's energy bill for these three months. **[5 marks]**

£ _____

7

Do not write outside the box

14 Fiona's hourly pay in 2022 is £9.50
In 2023 she will receive a 4% pay increase.

Work out Fiona's hourly pay in 2023.

[3 marks]

£ _____

15 A bag contains counters of four different colours.
A counter is randomly selected from the bag.
The probability of selecting a counter of a given colour is shown below.

Colour	Red	Blue	Yellow	Green
Probability	0.6	0.1		

The probability of selecting a yellow counters is the same as the probability of selecting a green counter.

Work out the probability of selecting a yellow counter.

[3 marks]

Answer _____

Do not write outside the box

16 A company uses 2 machines to produce cans.
The information below shows how fast each machine produces cans.

Machine A	Machine B
825 cans in 22 minutes	1719 cans in 45 minutes

Which machine produces cans at the faster rate?
You **must** show your working. **[3 marks]**

Answer _____

17 Alvin, Simon and Theodore all have Instagram.
Alvin has 5 times as many followers as Simon.
Theodore has one third of the followers of Simon.

Write as a ratio in simplest form, the number of followers Alvin has, to the number Simon has, to the number Theodore has. **[2 marks]**

Answer _____ : _____ : _____

11

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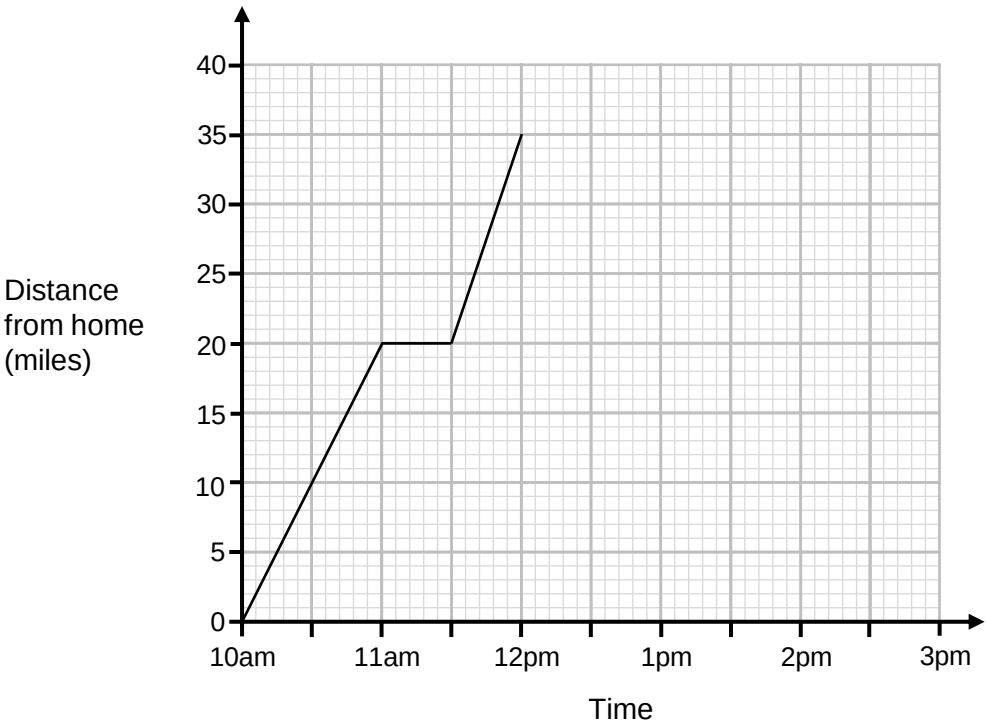
18 Mariana drives from her home to her friend's house.
Her friend lives 35 miles from her home.
Mariana stops on the way, to visit a park.



18 (a) How many minutes does Mariana spend at the park? **[1 mark]**

Answer _____ minutes

18 (b) Mariana spends 90 minutes at her friend's house. **[2 marks]**
She then returns home travelling at a constant speed
She arrives home at 2:30pm.

Complete the distance-time graph

Do not write outside the box

19 (a) x and y are whole numbers. **[2 marks]**

$12 \leq x < 20$ $5 < y < 9$

Work out the lowest possible value of $x - y$

Answer _____

19 (b) $2x = 3a + b$

Write down an expression in terms of a and b, equal to $6x$ **[1 mark]**

Answer _____

19 (c) $2x = 3a + b$

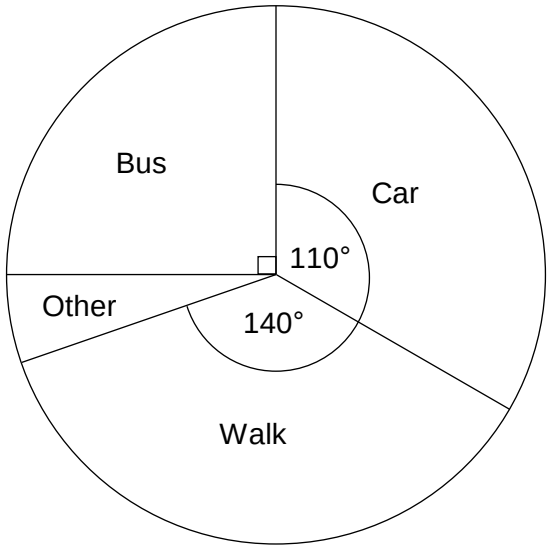
Write down an expression in terms of a and b, equal to $2x + a$ **[1 mark]**

Answer _____

7

Do not write outside the box

20 450 students were asked how they travelled to school.
The pie chart shows the results.

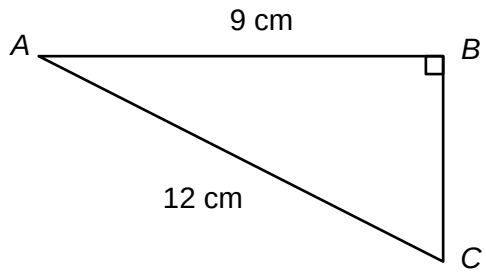


Work out how many students selected **other**. **[3 marks]**

Answer _____

Do not write outside the box

21 Here is triangle *ABC*.



Work out the length *BC*. **[3 marks]**

Answer _____ cm

6

Do not write outside the box

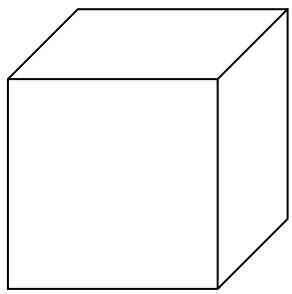
22 Use your calculator to work out the value of $\dfrac{3.2^4}{\sqrt{54}-3}$

Write down your full calculator display.

[2 marks]

Answer _____

23 Here is a cube



8 cm

Work out the surface area of the cube.

[2 marks]

_____

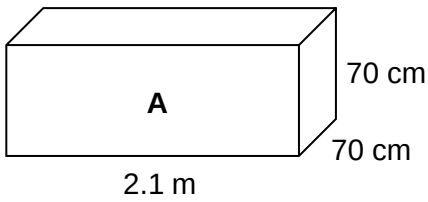
_____

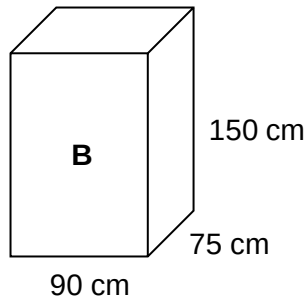
_____

Answer _____ cm^2

Do not write outside the box

24 Here are two cuboids.





Which cuboid has the greater volume?
You **must** show your working.

[3 marks]

Answer _____

7

Do not write outside the box

25 Pawel thinks of a number.

The highest common factor of his number and 20 is equal to 5.

His number is greater than 30.

Work out **two** possible numbers that Pawel could be thinking of. **[3 marks]**

Answer _____ and _____

26 c is an integer.

The cube root of c is between 8 and 9.
The cube root of $2c$ is between 11 and 12.

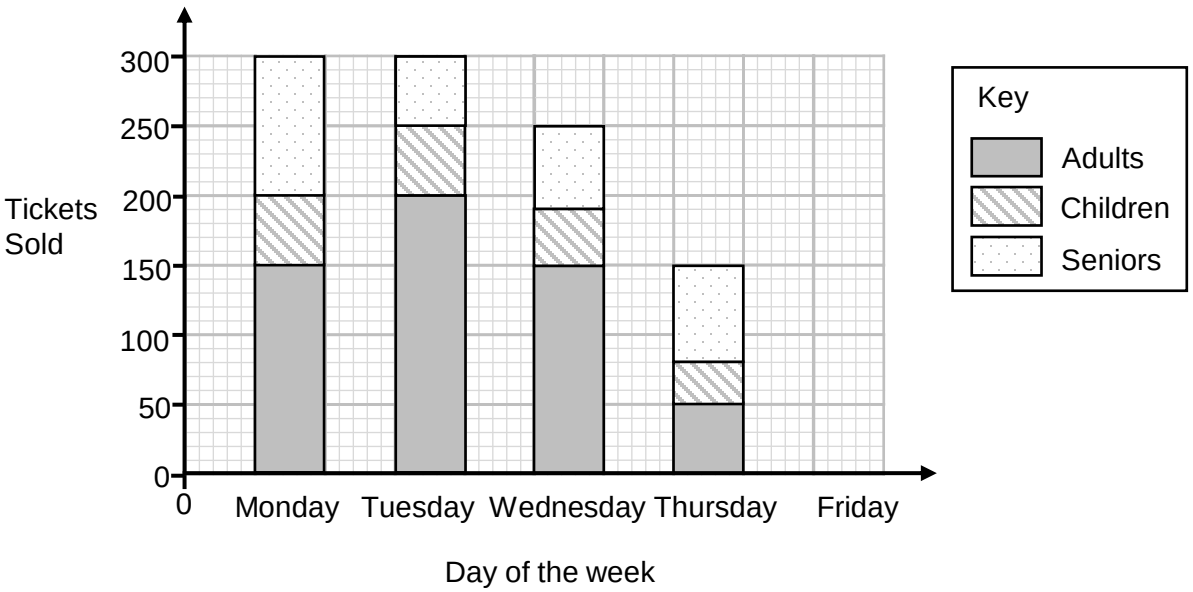
Work out a possible value for c. **[3 marks]**

Answer _____

Do not write outside the box

27 A theatre sells three types of tickets, adults, children and seniors.

The composite bar chart shows information about the different tickets sold during one week.



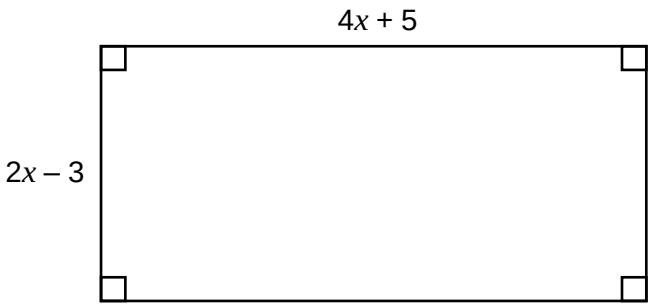
27 1250 tickets were sold in total during this week.
The theatre only sells tickets to adults and seniors on a Friday.
44% of the Friday tickets were sold to adults.

Complete the composite bar chart for Friday. **[4 marks]**

10

Do not write outside the box

28 Here is a rectangle with a perimeter of 52 cm



28 (a) Show that $12x + 4 = 52$ **[2 marks]**

28 (b) Find the value of x **[2 marks]**

$x =$ _____

Do not write outside the box

29 $m = u + 2p$

29 (a) Find the value of m when

$u = 3.2 \times 10^4$ and $p = 2.7 \times 10^3$ **[2 marks]**

Answer _____

29 (b) Rearrange $m = u + 2p$ to make p the subject. **[2 marks]**

Answer _____

8

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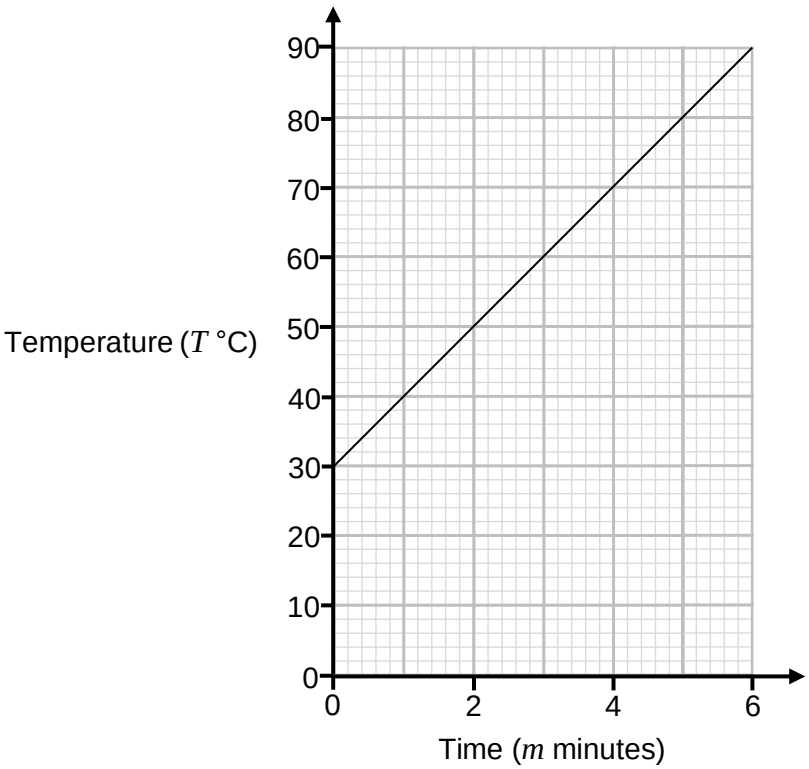
30 The graph shows the temperature (T °C) of a liquid that is being heated at time m minutes.



30 (a) The graph intersects the temperature axis at $T = 30$
Explain what this intercept represents.

[1 mark]

The graph above has equation $T = 10m + 30$
A metal is also heated and has a graph with equation $T = 20m + 20$

30 (b) Does the liquid or the metal heat at a faster rate?
Explain your answer fully.

[2 marks]

END OF QUESTIONS

3