



Class
Maths

Video Solutions



PRACTICE PAPER FOR

AQA Paper 1F (June 2023)

----- Disclaimer -----

In 2022 I wrote a series of predicted papers that in many cases reflected the real exam paper very well. This was due to the exam boards providing advance information on the topics that were going to be in each paper. This information is no longer provided so “predicting” a paper is not possible. Nobody can know what topics and types of questions will come up in each paper, apart from the few examiners that write them.

This paper has been created based on the **most common** paper 1 topics from previous years. Due to the nature of some topics they are better suited to paper 1 as if you had a calculator they would no longer be difficult to do. The paper should be excellent at helping students revise for exams, however should not be relied upon as the basis for revision. The topics from this paper may well appear in the real exams, however there is absolutely no guarantee of this for the reasons previously mentioned. Some topics may appear, some may not.

Ultimately the best way to prepare for the exams is to **revise all topics**.



@1stclassmaths

----- INFORMATION FOR TEACHERS -----

You will want to remove this page before printing to ensure that questions across a double page print in the correct places.

This paper been produced with careful analysis from previous papers.

The **Series** percentage below shows the percentage of times that this topic came up across a whole set of 3 papers. Some topics tend to appear almost every year in at least one paper.

The **Paper 1** percentage below shows the percentage of times that this topic came up specifically in the non calculator paper. As expected certain topics favour paper 1 over paper 2/3

Topic	Series	Paper 1	Question(s)
Fractions, Decimals and Percentages	100%	40%	1
Solving Linear Equations	100%	80%	2
Order of Operations	60%	60%	3
Written Addition/Subtraction	70%	50%	3
Simplify Algebraic Expressions	100%	50%	4
Money Problem	100%	90%	5
Write as a Fraction or Percentage	90%	70%	6
Negative Numbers	90%	70%	7
Averages and the Range	90%	60%	7
Time Conversions	100%	50%	8, 14
Percentage of an Amount	90%	90%	9
Types of Number (Prime, Squares, Cubes etc)	100%	40%	10
Area of Rectilinear Shapes	100%	60%	11, 12
Write as a Ratio	100%	70%	11
Circles and Sectors	90%	50%	12
Fraction Operations	90%	70%	13
Application of Ratio	90%	60%	14
Form and Solve Equation	100%	50%	15
Probability Calculation	100%	70%	16
Substitution	100%	60%	17
Averages from Tables	90%	40%	18
Direct and Inverse Proportion	70%	50%	19
Fraction of an Amount	100%	50%	20
Metric Unit Conversions	100%	40%	20
Sequences	100%	50%	21
Standard Form	100%	80%	22
Index Laws	60%	60%	23
Substitution	100%	60%	24



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

Do not write
outside the
box

1 (a) Write $\frac{7}{10}$ as a decimal

[1 mark]

Answer _____

1 (b) Write 9% as a decimal

[1 mark]

Answer _____

2 (a) Solve $2m = 14$

[1 mark]

$m =$ _____

2 (b) Solve $2 + p = 14$

[1 mark]

$p =$ _____





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outside the
box

3 (a) Work out $5 + 21 \times 3$ [2 marks]

Answer _____

3 (b) Work out $4.7 + 3.5 - 0.8$ [2 marks]

Answer _____

Turn over ►





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outside the
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4 Simplify $5h + 7 - 2h - 2$ [2 marks]

Answer _____

5 Nicolas has £3.00
Pedro has £5.50

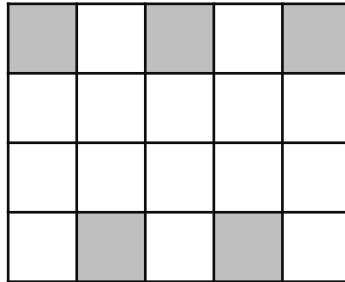
Nicolas has only 20p coins
Pedro has only 50p coins

How many coins do Nicolas and Pedro have in total? [3 marks]

Answer _____



- 6 (a) The grid below is made from 20 squares.

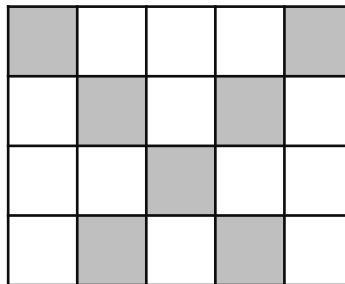


What **fraction** of the shape is shaded?
Give your answer in simplest form.

[2 marks]

Answer _____

- 6 (b) The grid below is made from 20 squares.



What **percentage** of the shape is shaded?

[2 marks]

Answer _____ %





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7 The table below shows the temperatures in some cities.

City	Temperature
Manchester	8 °C
London	-2 °C
Birmingham	-3 °C

7 (a) Write down the city with the lowest temperature. [1 mark]

Answer _____

7 (b) Work out the range of the temperatures of the cities. [2 marks]

Answer _____ °C

7 (c) Work out the mean temperature of the cities. [2 marks]

Answer _____ °C





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8 Write the following times in order.
Start with the smallest.

[3 marks]

100 minutes

$1\frac{1}{3}$ hours

$1\frac{1}{2}$ hours

Smallest _____

Largest _____

9 Work out 130% of 600

[3 marks]

Answer _____

Turn over ►





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10 m and n are **different** prime numbers.

10 (a) Work out a pair of values for m and n so that $m + n$ is a **square** number. [1 mark]

$$m = \underline{\hspace{2cm}} \quad n = \underline{\hspace{2cm}}$$

10 (b) Work out a pair of values for m and n so that $m + n$ is a **cube** number. [1 mark]

$$m = \underline{\hspace{2cm}} \quad n = \underline{\hspace{2cm}}$$

10 (c) Work out a pair of values for m and n so that $m + n$ is a **triangular** number. [1 mark]

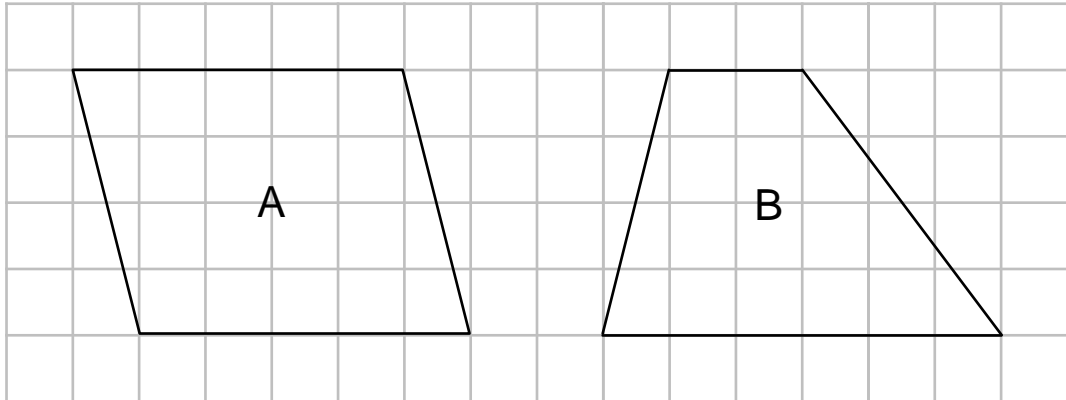
$$m = \underline{\hspace{2cm}} \quad n = \underline{\hspace{2cm}}$$





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11 Each square on the grid below represents 1 cm^2



Work out area of shape A : area of shape B

Give your answer in simplest form.

[3 marks]

Answer _____ : _____

$\frac{\quad}{6}$

Turn over ►



12 Here and some coins.



The radius of the 5p coin is 9 mm

The diameter of the 2p coin is 26 mm

The 2p coin has a greater circumference.

Work out how much greater, giving your answer in terms of π

[3 marks]

Answer _____ mm

13 Samantha receives some money for her birthday.

She spends $\frac{1}{4}$ of her money on a new mobile phone.

She spends $\frac{2}{7}$ of her money on a new coat.

She saved the rest of her money.

What fraction of her money does she save?

[3 marks]

Answer _____





Do not write outside the box

14 Gary and Phil both record how long they spend revising English and maths.
On Wednesday evening:

$$\begin{array}{l} \text{Time Gary spends} \\ \text{revising English} \end{array} : \begin{array}{l} \text{Time Gary spends} \\ \text{revising maths} \end{array} = 5 : 3$$

$$\begin{array}{l} \text{Time Phil spends} \\ \text{revising English} \end{array} : \begin{array}{l} \text{Time Phil spends} \\ \text{revising maths} \end{array} = 1 : 3$$

14 (a) Gary spends 40 minutes revising English.
Work out how many minutes Gary spends revising maths. **[2 marks]**

Answer _____ minutes

14 (b) Phil spends a total of 2 hours revising both subjects.
Work out how many minutes Phil spends revising maths. **[2 marks]**

Answer _____ minutes

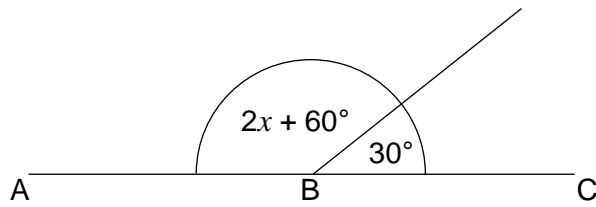
Turn over ►





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15 ABC is a straight line.



Work out the value of x

[3 marks]

$x =$ _____

16 A bag contains counters that are either blue, red or green.

There are 6 blue counters

There are twice as many green counters as red counters

The probability of selecting a blue counter is $\frac{1}{5}$

Work out how many red counters are in the bag.

[3 marks]

Answer _____





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17 Here is a formula for the cost of hiring a car.

$$C = 60 + 25d$$

C is the total cost of hiring the car in £.

d is the number of days that the car is hired for.

17 (a) Fiona wishes to hire a car for 6 days.
Work out the total cost that Fiona will need to pay.

[2 marks]

Answer £ _____

17 (b) Rachel hires a car for a total cost of £335
Work out how many days Rachel hires the car for.

[3 marks]

Answer _____ days

Turn over ►



- 18 Anthony asks everyone in his class how many pets they have. He writes the results in a frequency table shown below but forgets to write the frequency for students with 0 pets.

Pets	Frequency
0	
1	6
2	4
3	4
4	2

For each of the following statements, tick the correct box.

[3 marks]

	Must be true	Could be true	Cannot be true
The modal number of pets is 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The minimum number of pets is 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The median number of pets is 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





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19 A rectangle has

Length = l
Width = w
Area = 20 cm^2

19 (a) Work out the value of w if $l = 4 \text{ cm}$

[1 mark]

$w =$ _____ cm

19 (b) Work out the value of w if $l = 0.5 \text{ cm}$

[1 mark]

$w =$ _____ cm

19 (c) Tick the correct statement below

[1 mark]

w is directly proportional to l

w is inversely proportional to l

w is equal to l

$\frac{\quad}{6}$

Turn over ►

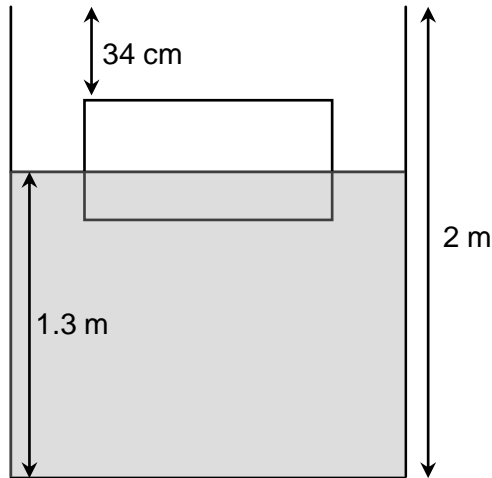


20

The diagram below shows a container with a height of 2 m
Liquid fills the container to a depth of 1.3 m

A wooden block floats in the liquid so that $\frac{2}{5}$ of it is below the water level.

The vertical distance from the top of the block to the top of the container is 34 cm.



Work out the distance from the bottom of the block to the bottom of the container.
Give your answer in cm.

[4 marks]

Answer _____ cm





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21 (a) The 4th term of a geometric progression is 20

The 5th term of the same geometric progression is 40

Work out the 6th term.

[2 marks]

Answer _____

21 (b) The 9th term of an arithmetic progression is 10

The 10th term of the same arithmetic progression is 5

Work out the 7th term.

[2 marks]

Answer _____

$\frac{\quad}{8}$

Turn over ►





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22 (a) Write 0.00041 in standard form.

[1 mark]

Answer _____

22 (b) Write 3 million in standard form.

[1 mark]

Answer _____

22 (c) $a = 3.1 \times 10^2$
 $b = 6 \times 10^{-1}$

Work out the value of $2a + 3b$
Give your answer as an ordinary number.

[3 marks]

Answer _____





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23

Work out the value of $\frac{2^{10}}{2^8 \times 2^{-1}}$

[3 marks]

Answer _____

24

Use approximations to estimate the value of $\frac{311 \times 19}{0.21^2}$

[3 marks]

Answer _____

