BennettMaths will be live on TikTok the night before paper 2, going through all the predicted papers.
Tuesday 2nd June at 8pm

Candidate surname	Other names

BennettMaths
Engaging Learners

AQA

Best Guess Paper – 2H Calculator

Within this booklet you will find my best guess at which topics might be on the second AQA Higher gcse maths paper.

There may be other topics that appear on paper 2, so please ensure that you continue to revise all topics.

The paper consists of 24 questions totalling 80 marks.

1

(a) Write down the highest common factor (HCF) of 30 and 45 **[1 mark]**

Answer _____

(b) Write down the lowest common multiple (LCM) of 30 and 45 **[1 mark]**

Answer _____

2 Solve $5 - 4x \geq 12$ **[2 marks]**

Answer _____

3

Sam invests £3500 into a bank account paying 5.4% compound interest, per annum, for 3 years. **[3 marks]**

Work out the total amount of interest gained after 3 years.

Answer _____

4 A number, n, is rounded to 2 significant figures.
The result is 2.3
Complete the error interval for n

[2 marks]

..... $\leq n <$ .....

5
Frankie travels 400km in 4 hours and 48 minutes. **[2 marks]**

Work out his average speed, giving your answer as a decimal.

Answer _____

6 A linear sequence has:
2nd term = 190
5th term = 166

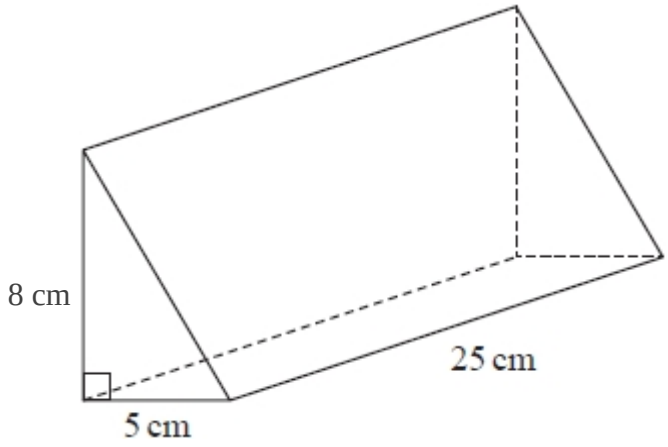
(a) Work out the nth term of the sequence **[2 marks]**

Answer _____

(b) Work out the first term in the sequence that is negative **[2 marks]**

Answer _____

7 The diagram shows a prism.



The cross section of the prism is a right-angled triangle.

The base of the triangle has length 5 cm

The prism has length 25 cm

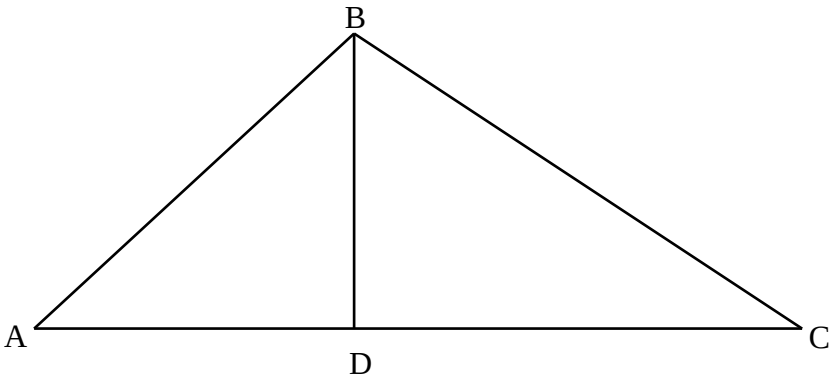
The mass of the prism is 250g.

Work out the density of the prism. **[3 marks]**

Answer _____

8 Triangle ABC has been drawn below.
Angle ADB and BDC are 90°.
AB = 5.4 cm
BC = 6.2 cm
AD = 3.5 cm

.



Work out the size of angle BCD

[4 marks]

Answer _____

9 Solve

$$5x^2 + 2x - 10$$

[3 marks]

Answer _____

10 Solve algebraically

$$3x + 2y = 9.5$$
$$7x - 5y = 41.5$$

[4 marks]

Answer _____

11 The frequency table below shows the pocket money received by 35 pupils in April.

[4 marks]

Pocket Money	Frequency
$0 \leq x < 5$	7
$5 \leq x < 8$	8
$8 \leq x < 10$	16
$10 \leq x < 20$	4

The mean amount of pocket money received in March was £7.50.
By estimating the mean, determine in which month pupils received the most pocket money, on average.

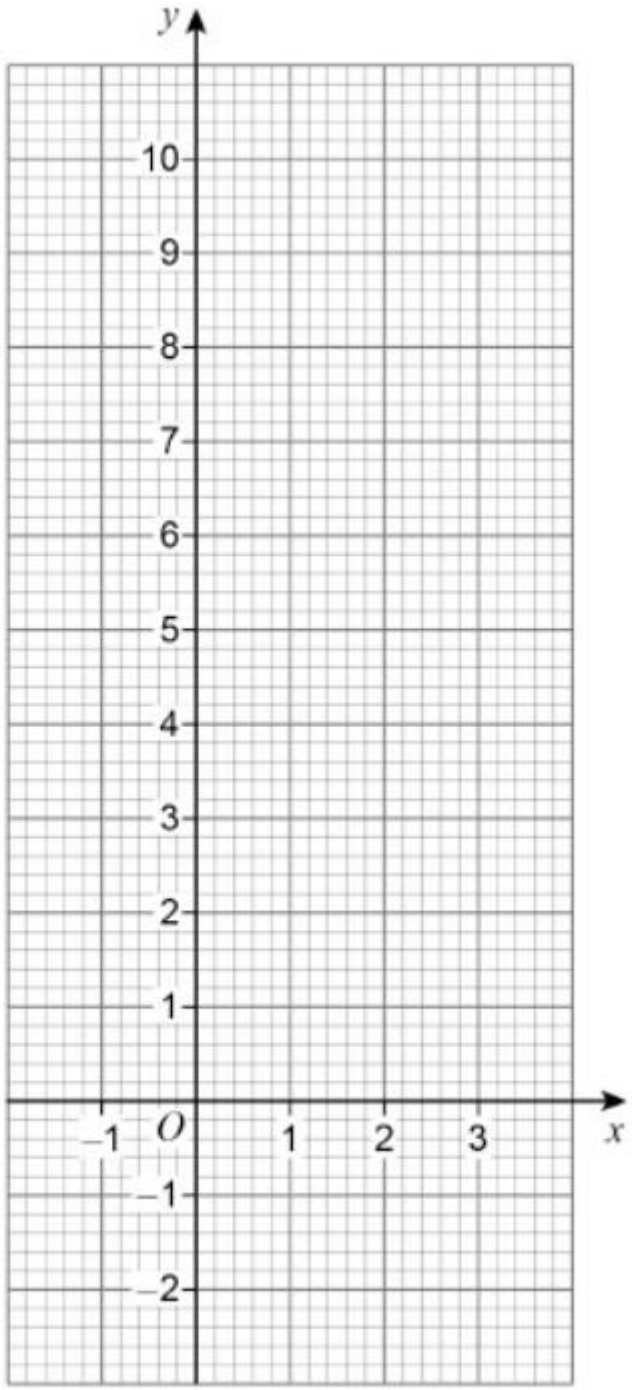
March

April

12(a) Complete the table of values of $y = 2^x$. **[2 marks]**

x	-1	0	1	2	3
y					

(b) Draw the graph of $y = 2^x$ for values of x from -1 to 3 **[2 marks]**



13 A combination lock contains 4 digits using the numbers 0 to 9.

(a) If numbers can be repeated, how many different combinations are possible

[2 marks]

Answer _____

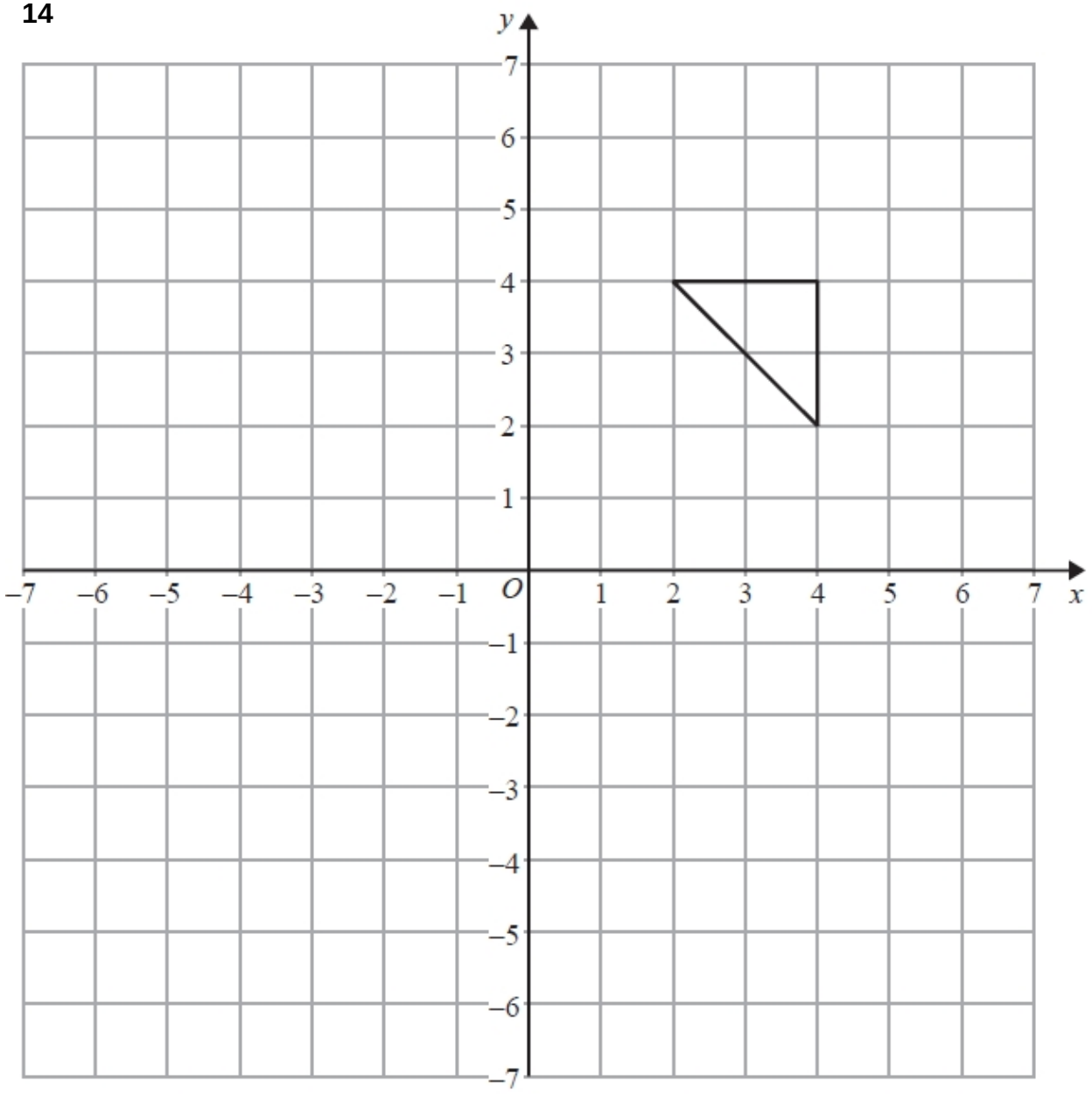
The combination lock requires different numbers for each digit

(b) Work out how many different combinations are possible

[2 marks]

Answer _____

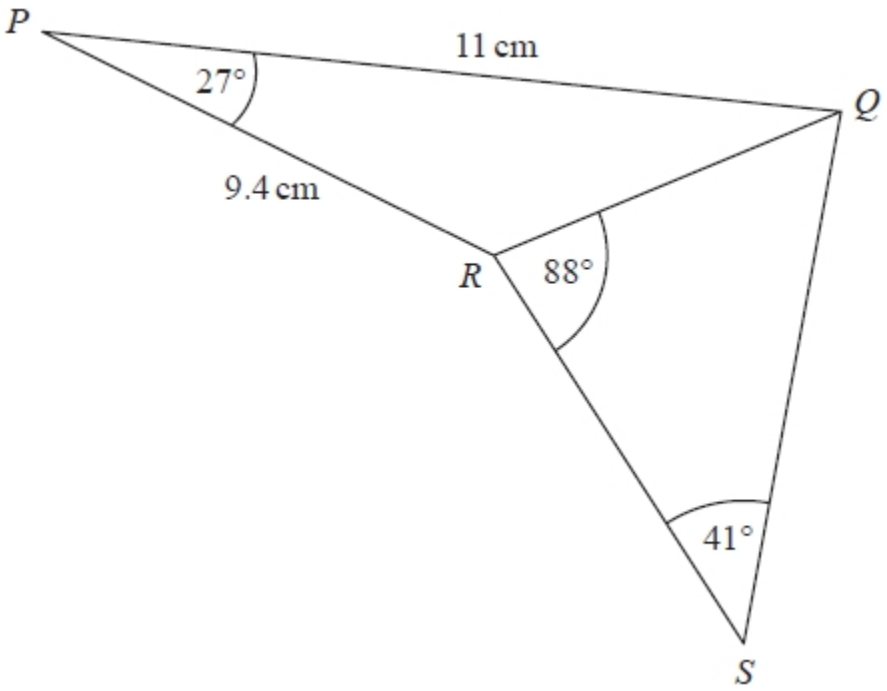
14



On the grid, enlarge the triangle by scale factor -1.5 with centre (0,2)

[2 marks]

15 PQR and QRS are triangles



Calculate the length of RS.

Give your answer correct to 3 significant figures.

You must show all of your working

[4 marks]

Answer _____

16 Simplify fully

$$\frac{60x^2 - 15}{2x + 1}$$

[2 marks]

Answer _____

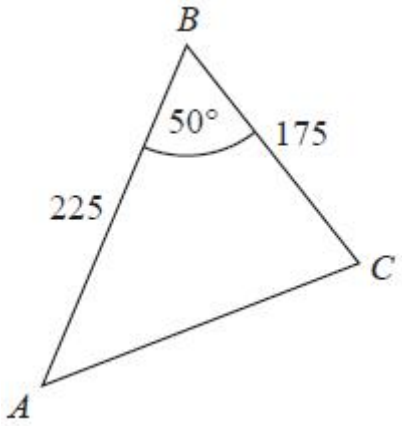
17 A circle ***C*** has a centre of $(0,0)$ and a diameter of 25

Write down the equation of the circle

[1 mark]

Answer _____

18 Sam measures a field.



The length AB measures 225m correct to the nearest 5m

The length BC measures 175m correct to the nearest 5m

Angle ABC measures 50° correct to the nearest degree.

Work out the upper bound for the area of the field.

You must show your working.

[4 marks]

Answer _____

19 y is directly proportional to x^3

When y is 320 and x is 4.

Work out the value of x when y is 135

[3 marks]

Answer _____

20 The population of grey squirrels in Longridge in 2026 was 12,000.
Population growth is given by the following iterative formula

$$P_{n+1} = 1.04P_n + 180$$

Work out an estimate for the number of grey squirrels in Longridge in 2027, 2028 and 2028

[3 marks]

Answers 2027 .....

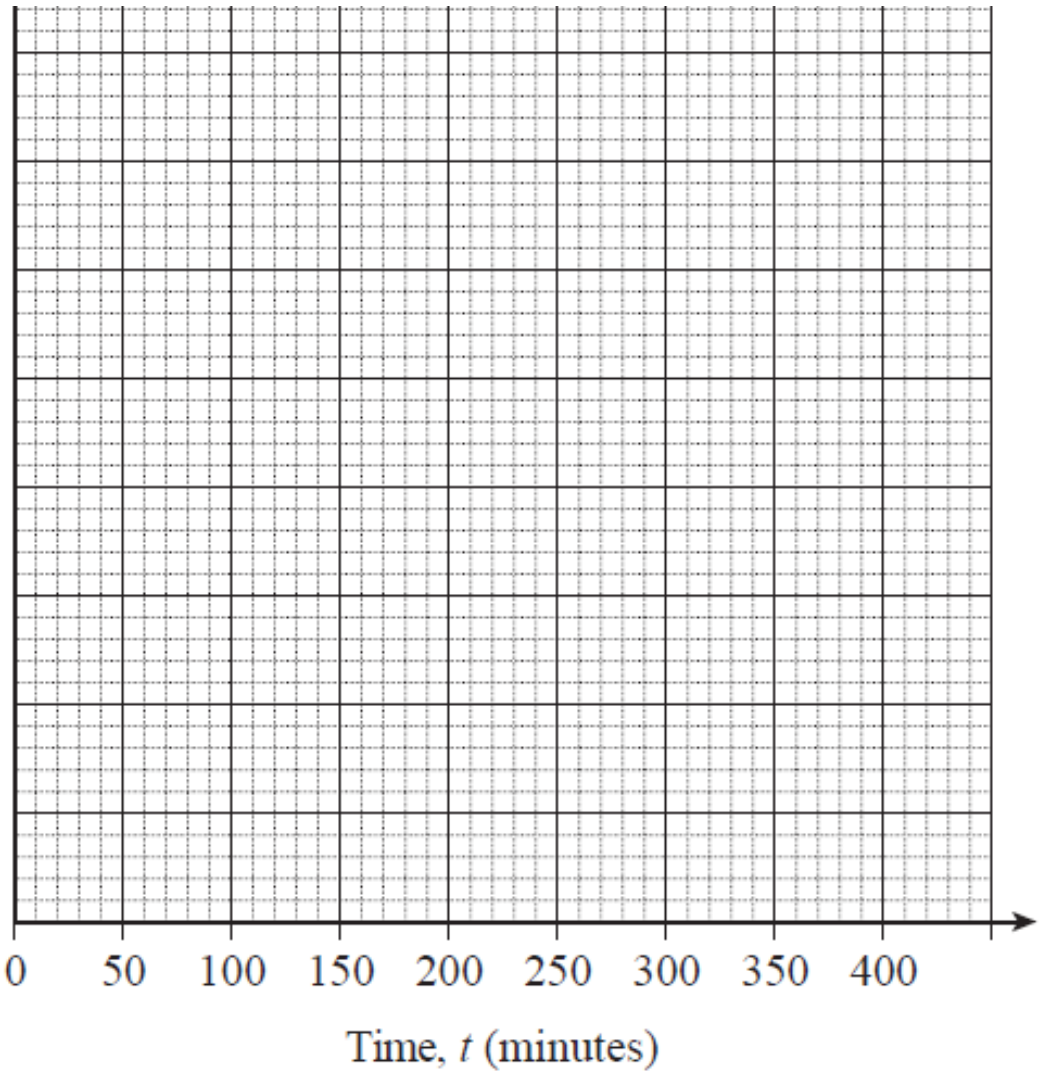
2028 .....

2029 .....

21 The frequency table shows the time taken to complete a journey

Time, t (minutes)	Frequency
$60 < t \leqslant 150$	18
$150 < t \leqslant 180$	66
$180 < t \leqslant 240$	60
$240 < t \leqslant 360$	36

Construct a histogram to represent this information **[3 marks]**



22 $f(x) = 3x^2 - 2$ $g(x) = 2x + 3$

(a) Find fg(2) **[2 marks]**

Answer _____

(b) Find $f^{-1}(x)$ **[2 marks]**

Answer _____

(c) Solve $fg(x) = g^{-1}(5)$ **[4 marks]**

Answer _____

23
There are 20 pupils in a class.
x are girls and the rest are boys.

Two pupils are going to be selected at random.

Work out the probability of selecting 1 girl and 1 boy, giving your answer in terms of x, in its simplest form.

[5 marks]

Answer _____

24

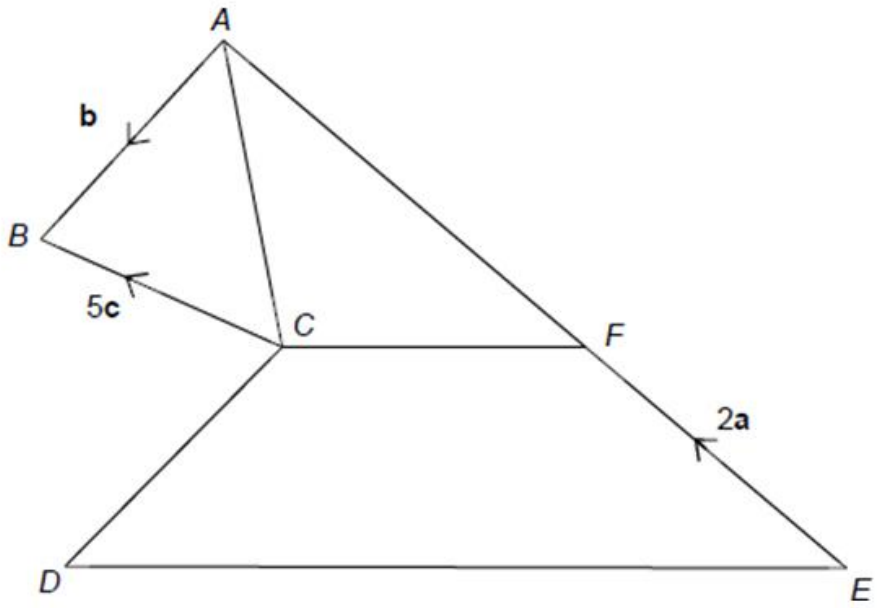
AFE is a straight line.

$AF : FE = 5 : 4$

DE is parallel to CF.

$DE = 2.5CF$

$\overrightarrow{EF} = 2\mathbf{a}$ $\overrightarrow{AB} = \mathbf{b}$ $\overrightarrow{CB} = 5\mathbf{c}$



Work out $\overrightarrow{DE}$ in terms of **a**, **b** and **c**. **[5 marks]**

Answer _____

END OF QUESTIONS