1st Class Maths

Video Solutions

SCAN ME

PRACTICE PAPER FOR

Edexcel Paper 2H (June 2025)

Disclaimer

This paper has been created based on the **most common** paper 2/3 topics from previous years and also careful analysis of what topics have already appeared in paper 1. 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. Some topics may appear, some may not. Anybody giving you any sort of guarantee is misleading you. If any topics or questions from this paper do come up, this is just lucky guessing and nothing more. ☺

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

You can find a link to this paper and many more completely free resources at www.1stclassmaths.com

Answer ALL questions

Write your answers in the spaces provided

You must write down all the stages in your working.

1 (a) Use your calculator to work out $\dfrac{\sqrt{9001} + 46.4^2}{13.37}$

Write down all the figures on your calculator display.

.....

(2)

(b) Round your answer from part (a) to 2 significant figures.

.....

(1)

(Total for Question 1 is 3 marks)

2 The first four terms of an arithmetic sequence are

–2 8 18 28 …

Write down an expression, in terms of n, for the nth term of the sequence.

.....

(Total for Question 2 is 2 marks)

3 (a) Simplify $(h^4)^5$

.....

(1)

(b) Write $\dfrac{5^{100} \times 5^{10}}{5^{-3}}$ as a power of 5

.....

(2)

(Total for Question 3 is 3 marks)

4 Arthur invests £2000 in a bank.
The bank pays annual compound interest at a rate of 3.5%

Arthur wishes to withdraw his money when he has made at least £500 in interest.

Work out how many years Arthur will need to wait before withdrawing his money.

You must show your working clearly.

..... years

(Total for Question 4 is 3 marks)

Turn over ▶

5 The table shows information about the temperatures in a city during the month of May.

Temperature, T (°C)	Frequency
$10 < T \leq 14$	3
$14 < T \leq 18$	6
$18 < T \leq 22$	10
$22 < T \leq 26$	8
$26 < T \leq 30$	4

(a) Find the class interval that contains the median.

.....

(1)

(b) Work out an estimate for the mean temperature in May.
Give your answer to 1 decimal place.

..... °C

(3)

(Total for Question 5 is 4 marks)

6 Jakob runs a 1500 m race.

He runs the first 800 m of the race in 2 minutes 40 seconds.
He runs the final 700 m of the race in 2 minutes 5 seconds.

Jakob's average speed for the final 700 m is x% greater than his average speed for the first 800 m.

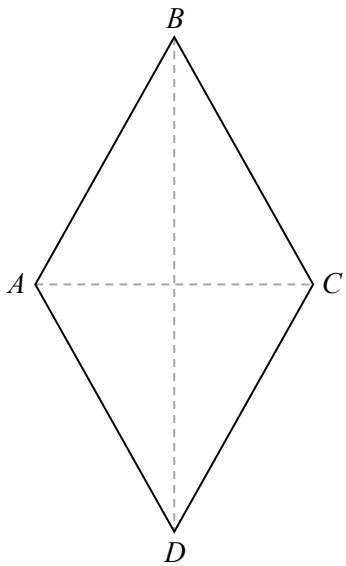
Work out the value of x.

..... %

(Total for Question 6 is 5 marks)

Turn over ▶

7 *ABCD* is a rhombus.



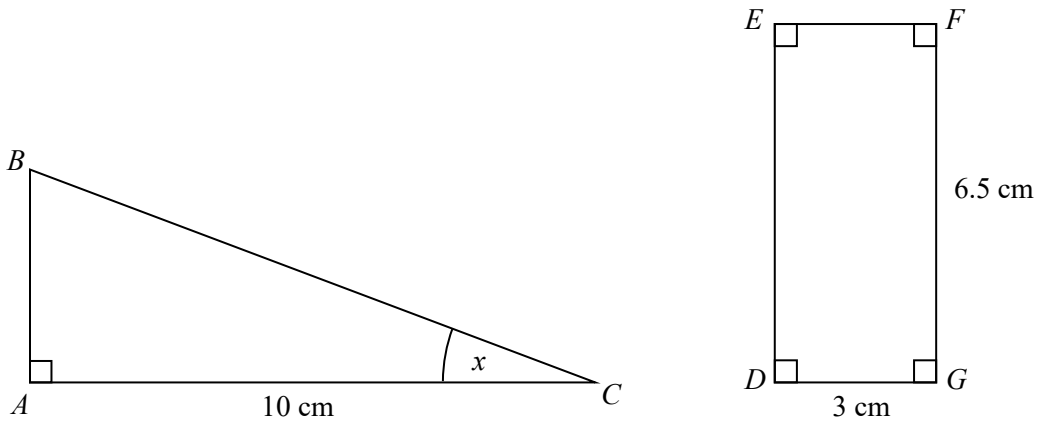
AC = 17.6 cm
BD = 21 cm

Work out the perimeter of rhombus *ABCD*.

..... cm

(Total for Question 7 is 4 marks)

8 Triangle ABC and rectangle $DEFG$ have the same area.



Work out the size of the angle marked x.
Give your answer to 1 decimal place.

.....°

(Total for Question 8 is 5 marks)

9 The school football club has at least 2 members from each year group.

The football coach needs to select two students, from different year groups, to be club captains.

There are 77 ways of selecting one student from Year 9 and one student from Year 10.
There are 253 ways of selecting one student from Year 10 and one student from Year 11.

Work out the number of ways of selecting one student from Year 9 and one student from Year 11.

.....

(Total for Question 9 is 3 marks)

10 Expand and simplify $(x + 1)(2x - 1)(x + 4)$

.....

(Total for Question 10 is 3 marks)

11 The equation of a circle is $x^2 + y^2 = 696.96$

(a) Write down the coordinates of the centre of the circle.

.....

(1)

(b) Write down the radius of the circle

.....

(1)

(Total for Question 11 is 2 marks)

12 (a) Factorise $3x^2 + 4x - 7$

.....

(2)

(b) Write $\frac{1}{3n} + \frac{8}{n^2}$ as a single fraction in its simplest form.

.....

(2)

(Total for Question 12 is 4 marks)

Turn over ▶

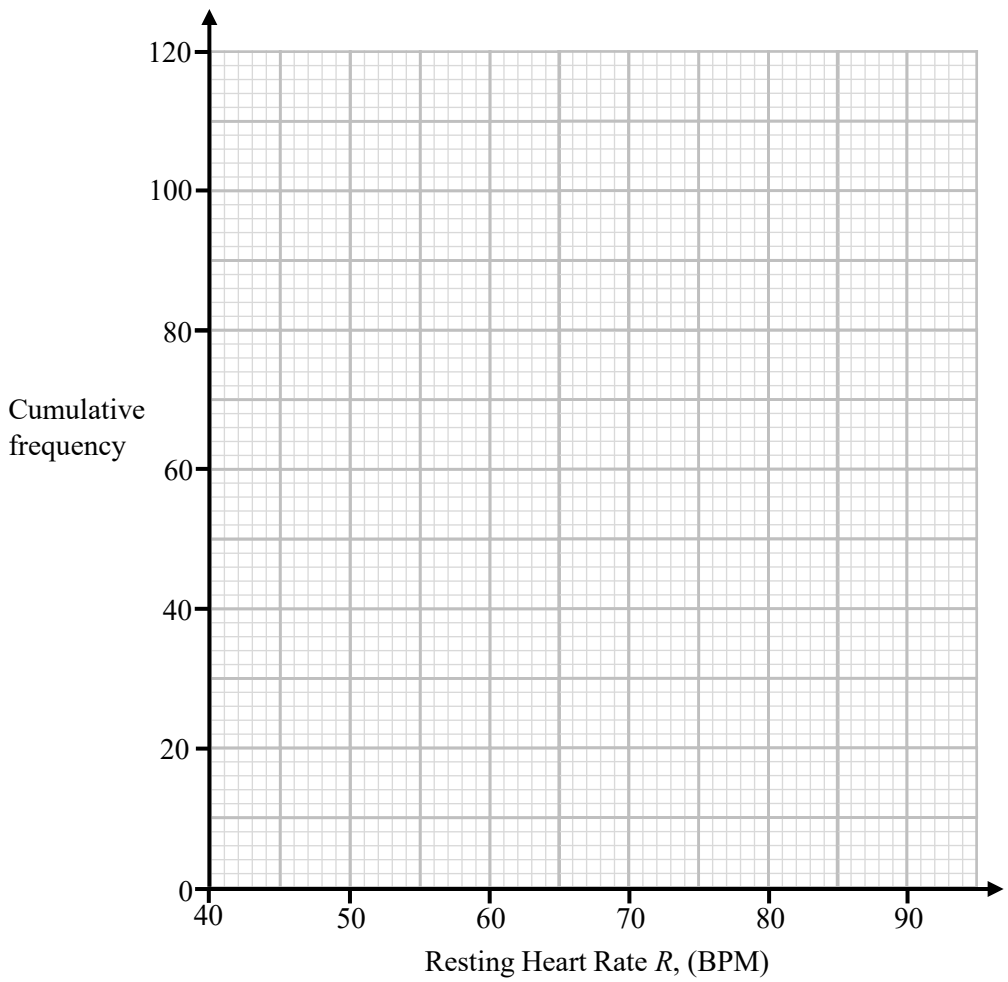
13 The grouped frequency table gives information about the resting heart rates R, in BPM (beats per minute), of 120 adults.

Resting Heart Rate R, (BPM)	Frequency
$40 < R \leq 50$	10
$50 < R \leq 60$	16
$60 < R \leq 70$	54
$70 < R \leq 80$	28
$80 < R \leq 90$	12

Resting Heart Rate R, (BPM)	Cumulative Frequency
$40 < R \leq 50$	
$40 < R \leq 60$	
$40 < R \leq 70$	
$40 < R \leq 80$	
$40 < R \leq 90$	

(a) Complete the cumulative frequency table. **(1)**

(b) On the grid, draw the cumulative frequency graph for this information.



(2)

13 (c) Use your graph to find an estimate for the median resting heart rate of the 120 adults.

..... BPM

(1)

(d) Use your graph to find an estimate for the percentage of the 120 adults with a resting heart rate below 55 BPM.

.....%

(2)

(Total for Question 13 is 6 marks)

14 The straight line **L** has the equation $y = 7 - \frac{1}{4}x$

The point A has coordinates $(-2, 9)$

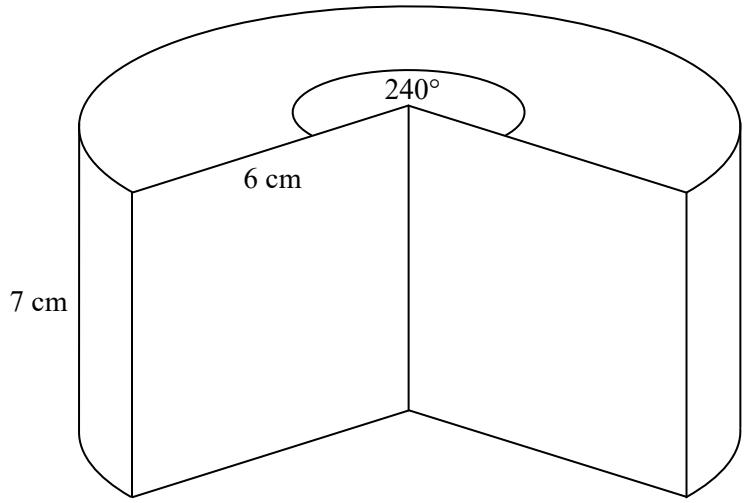
Find an equation of the straight line that is perpendicular to **L** and passes through A.

.....

(Total for Question 14 is 3 marks)

Turn over ▶

15 The diagram shows a prism.



The cross section is a sector of a circle with radius 6 cm and reflex angle 240°
The height of the prism is 7 cm.

Work out the total surface area of the prism.
Give your answer to 4 significant figures.

..... cm^2

(Total for Question 15 is 5 marks)

16 (a) Show that the equation $x^3 + 5x - 20 = 0$ can be rearranged to give $x = \sqrt[3]{20 - 5x}$

(1)

(b) Starting with $x_0 = 2$

use the iteration formula $x_{n+1} = \sqrt[3]{20 - 5x_n}$ three times to find an estimate for a solution of $x^3 + 5x - 20 = 0$

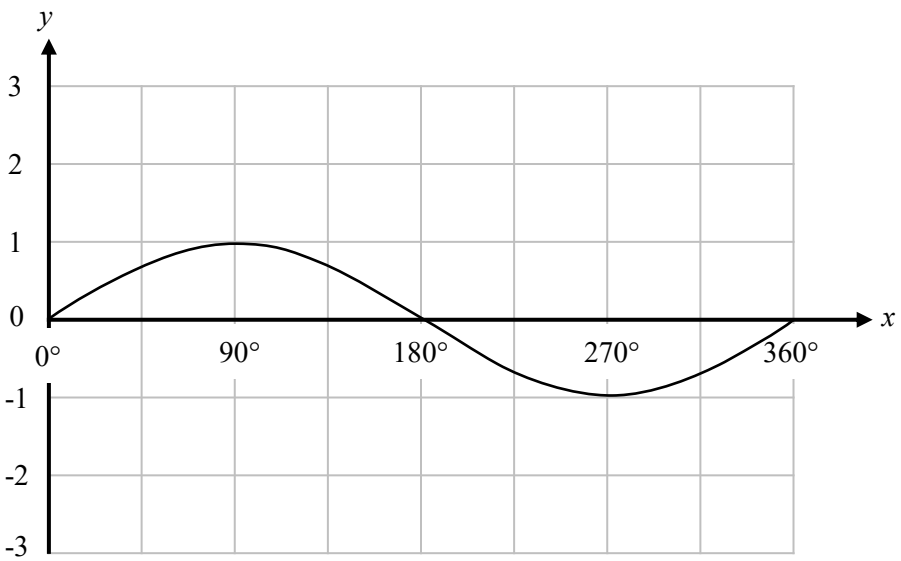
.....

(3)

(Total for Question 16 is 4 marks)

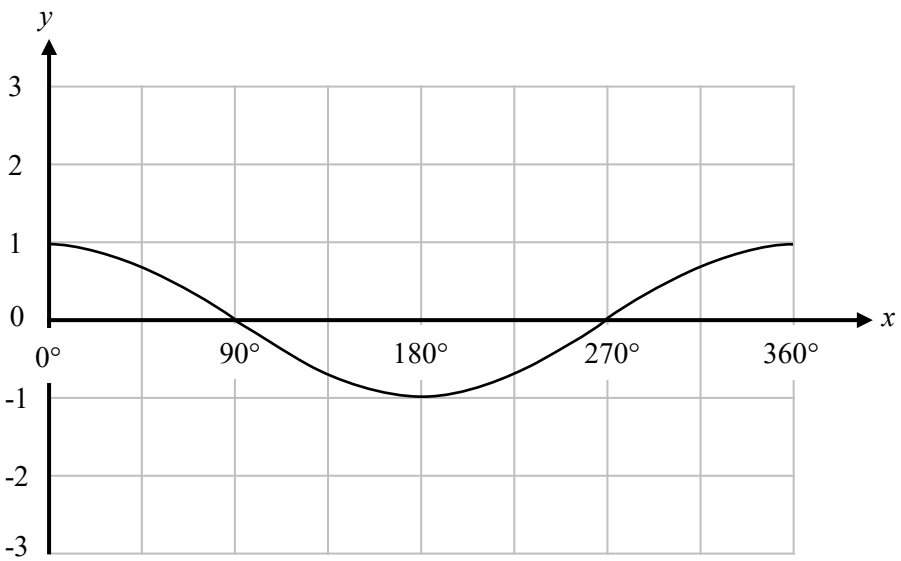
Turn over ▶

17 Here is the graph of $y = \sin x°$ for $0° \leqslant x \leqslant 360°$



(a) On the grid above sketch the graph of $y = \sin x° + 1$ for $0° \leqslant x \leqslant 360°$ **(1)**

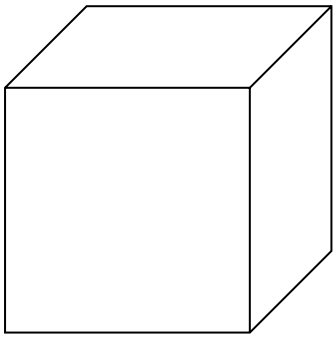
Here is the graph of $y = \cos x°$ for $0° \leqslant x \leqslant 360°$



(b) On the grid above sketch the graph of $y = \cos (x – 90°)$ for $0° \leqslant x \leqslant 360°$ **(1)**

(Total for Question 17 is 2 marks)

18 Here is a cube.



The area of each face of the cube is 50 cm^2, correct to the nearest square centimetre.
The mass of the cube is 460 g, correct to the nearest 10 g.

The density of the cube is D g/cm^3

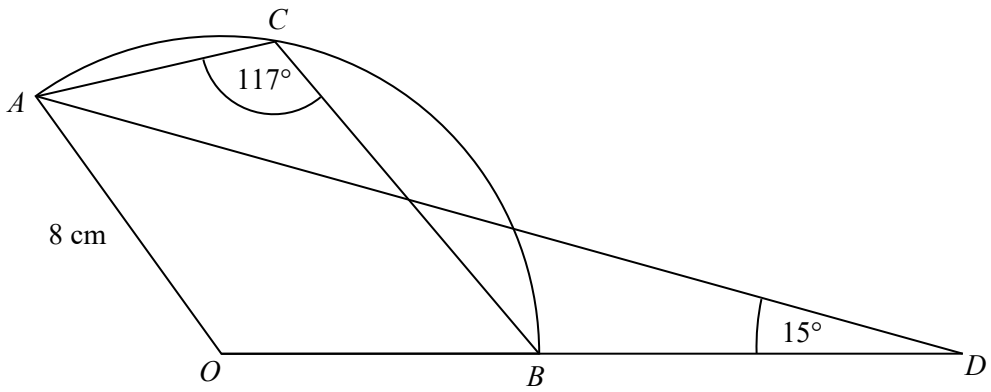
By considering bounds, calculate the value of D to a suitable degree of accuracy.
You must show all your working and give a reason for your answer.

..... g/cm^3

(Total for Question 18 is 5 marks)

Turn over ▶

19



OAB is a sector of a circle.
Point *C* is on the arc *AB*.
AOD is a triangle.
OBD is a straight line.

AO = 8cm Angle *ACB* = 117° Angle *ODA* = 15°

Work out the area of triangle *AOD*.
Give your answer to 1 decimal place.

..... cm^2

(Total for Question 19 is 6 marks)

20 Nena has only red, blue and green balloons.

The number of red balloons Nena has is n.
The number of blue balloons Nena has is 5 more than the number of red balloons.
The number of green balloons Nena has is 5 more than the number of blue balloons.

Nena selects two of her balloons at random.
The probability that both balloons selected are red is less than $\frac{1}{10}$

(a) Show that $n^2 - 97n - 210 < 0$

(4)

(b) By solving $n^2 - 97n - 210 < 0$
work out the **maximum** number of red balloons that Nena could have.

.....red balloons

(4)

(Total for Question 20 is 8 marks)

TOTAL FOR PAPER IS 80 MARKS