1st Class Maths

Video Solutions

SCAN ME

PRACTICE PAPER FOR

Edexcel Paper 3H (June 2025)

---------- Disclaimer ----------

This paper has been created based on the **most common** paper 3 topics from previous years and also careful analysis of what topics have already appeared in paper 1/2. 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) Expand and simplify fully $9(h + 2) – 5(h – 3)$

.....

(2)

(b) Simplify $\dfrac{6n^5 \times 3nm^3}{2n^2m}$

.....

(3)

(Total for Question 1 is 5 marks)

2 The first four terms of an arithmetic sequence are

9 15 21 27 …

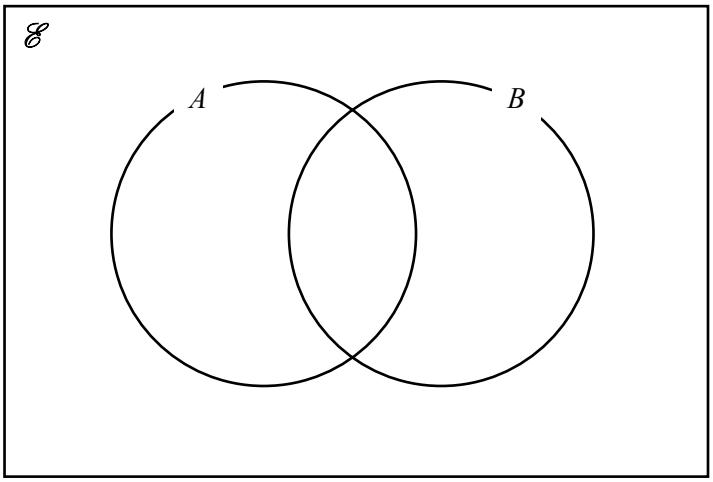
Write down an expression, in terms of n, for the nth term of the sequence.

.....

(Total for Question 2 is 2 marks)

3 $\mathscr{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
$A = \{\text{square numbers}\}$
$B = \{\text{odd numbers}\}$

(a) Complete the Venn diagram for this information.



(3)

A number is chosen at random from the universal set, $\mathscr{E}$

(b) Find the probability that this number is in the set $A \cap B$

.....

(1)

(Total for Question 3 is 4 marks)

4 A number, c, is rounded to 1 decimal place.
The result is 20.4

Complete the error interval for c.

..... $\leq c <$ .....

(Total for Question 4 is 2 marks)

5 (a) Use your calculator to work out $\sqrt{\frac{9.8}{4-\pi}+2}$

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 5 is 3 marks)

6 Noah invests £5000 in a savings account for 4 years.
The account pays compound interest.

After 1 year Noah's investment is worth £5200
Work out how much Noah's investment is worth after 4 years.

£.....

(Total for Question 6 is 4 marks)

7 The table shows information about the race times, t seconds, of 8 athletes in an 800 m race.

Time, t (seconds)	Frequency
$125 < t \leq 130$	1
$130 < t \leq 135$	3
$135 < t \leq 140$	4

(a) Use this information to work out an estimate for the mean race time of the 8 athletes.

..... seconds

(3)

One of the athletes ran the race with an average speed of 6.1 m/s.

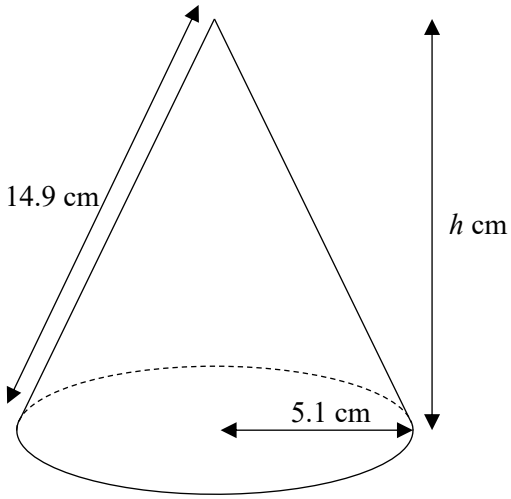
(b) Did this athlete win the race?
Show working to support your answer.

(3)

(Total for Question 7 is 6 marks)

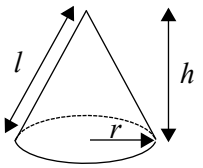
Turn over ▶

8 The diagram shows a cone.



Volume of a cone = $\frac{1}{3}\pi r^2 h$

Curved surface area of cone = πrl



(a) Show that h, the perpendicular height of the cone, is 14 cm.

(2)

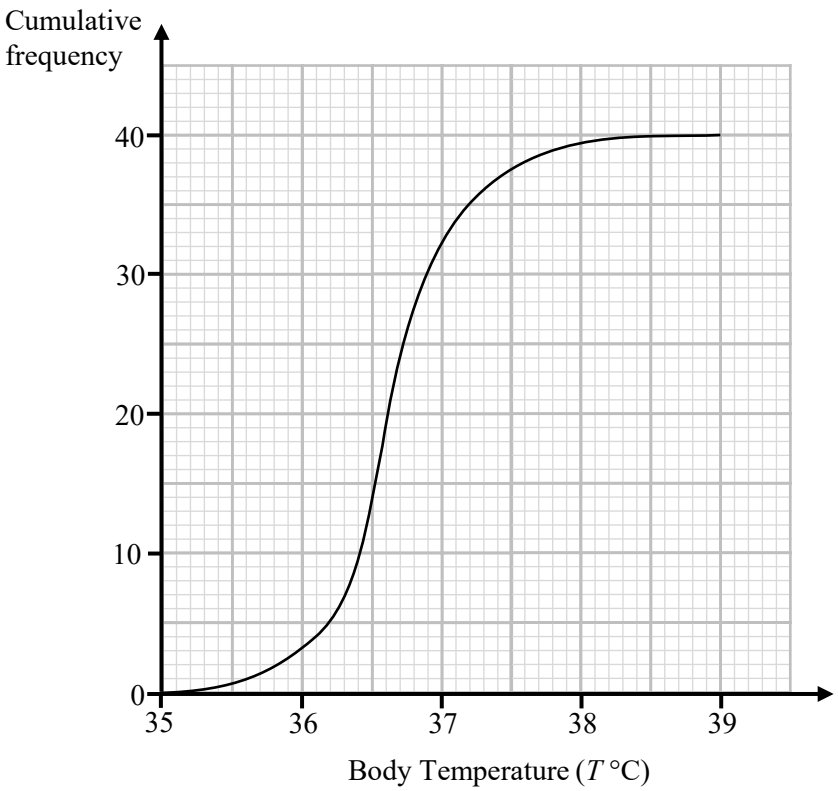
(b) Work out the volume of the cone.
Give your answer to 1 decimal place.

..... cm^3

(2)

(Total for Question 8 is 4 marks)

9 The cumulative frequency graph shows some information about the body temperatures, T °C, of 40 patients who visited a doctor's surgery.



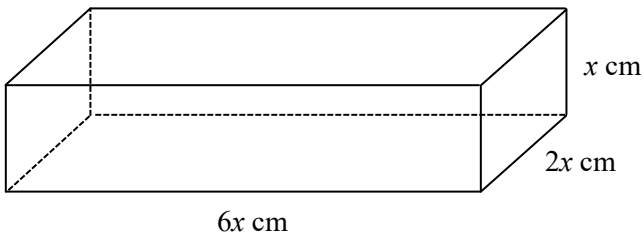
A normal body temperature is between 36.1 °C and 37.2 °C

Work out the percentage of the patients visiting the doctor's surgery that had a normal body temperature.

..... %

(Total for Question 9 is 3 marks)

10 Here is a cuboid.



The surface area of the cuboid is 810 cm^2
Work out the volume of the cuboid.

..... cm^3

(Total for Question 10 is 4 marks)

11 44200 fans attend a football match.
Each of the fans supports either the home or away team.

The number of fans who support the home team is 8% more than the number of fans who support the away team.

Work out the percentage of fans attending the match that supported the **away** team.
Give your answer to 1 decimal place.

..... %

(Total for Question 11 is 4 marks)

12 The equation of line $\mathbf{L_1}$ is $y = 2x + 1$
The equation of line $\mathbf{L_2}$ is $4y + 2x = 22$

Show that these two lines are perpendicular.

(Total for Question 12 is 2 marks)

13 (a) Factorise $x^{10} - y^{12}$

.....

(1)

(b) Simplify fully $\dfrac{9mn - 9m}{3 - 3n}$

.....

(2)

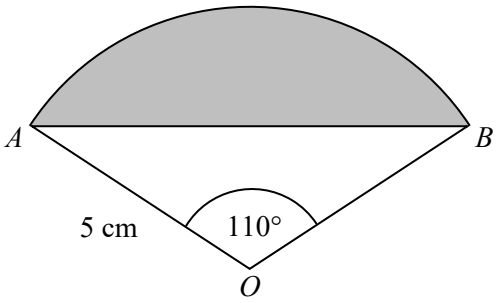
(c) Make x the subject of the formula $\dfrac{x}{x + y} = y$

.....

(3)

(Total for Question 13 is 6 marks)

14 OAB is a sector of a circle.



Work out the area of the shaded region.
Give your answer to 3 significant figures.

..... cm^2

(Total for Question 14 is 4 marks)

Turn over ▶

15 $x^2 - 10x - 30 = (x - a)^2 - b$

(a) Find the values of a and b.

$a =$ .....

$b =$ .....

(2)

(b) Write down the coordinates of the turning point of the graph of $y = x^2 - 10x - 30$

(....., ...)

(1)

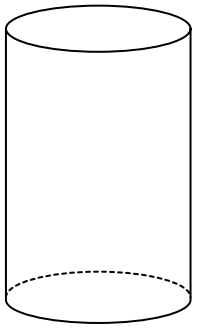
(Total for Question 15 is 3 marks)

16 Solve $\frac{4}{2x-3} = 1 - \frac{3}{x+2}$

.....

(Total for Question 16 is 4 marks)

17 The height of a cylinder is 9 m (to the nearest metre).



$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

The cylinder exerts a force of 4.3×10^5 Newtons (to 2 significant figures) onto a floor.
The pressure between the cylinder and the floor is 6000 N/m^2 (to 1 significant figure).

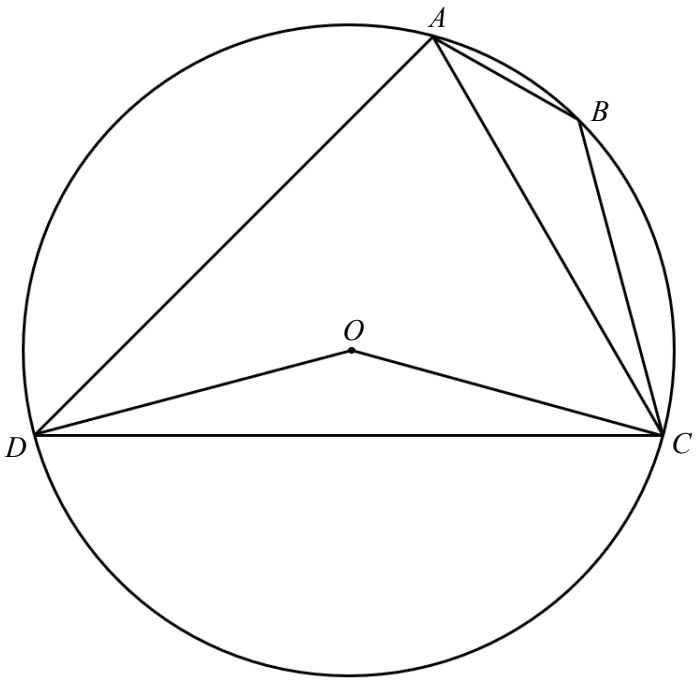
Calculate the upper bound for the **volume** of the cylinder.
Give your answer to 5 significant figures.

..... m^3

(Total for Question 17 is 5 marks)

Turn over ▶

18 A, B, C and D are points on the circumference of a circle with centre O.



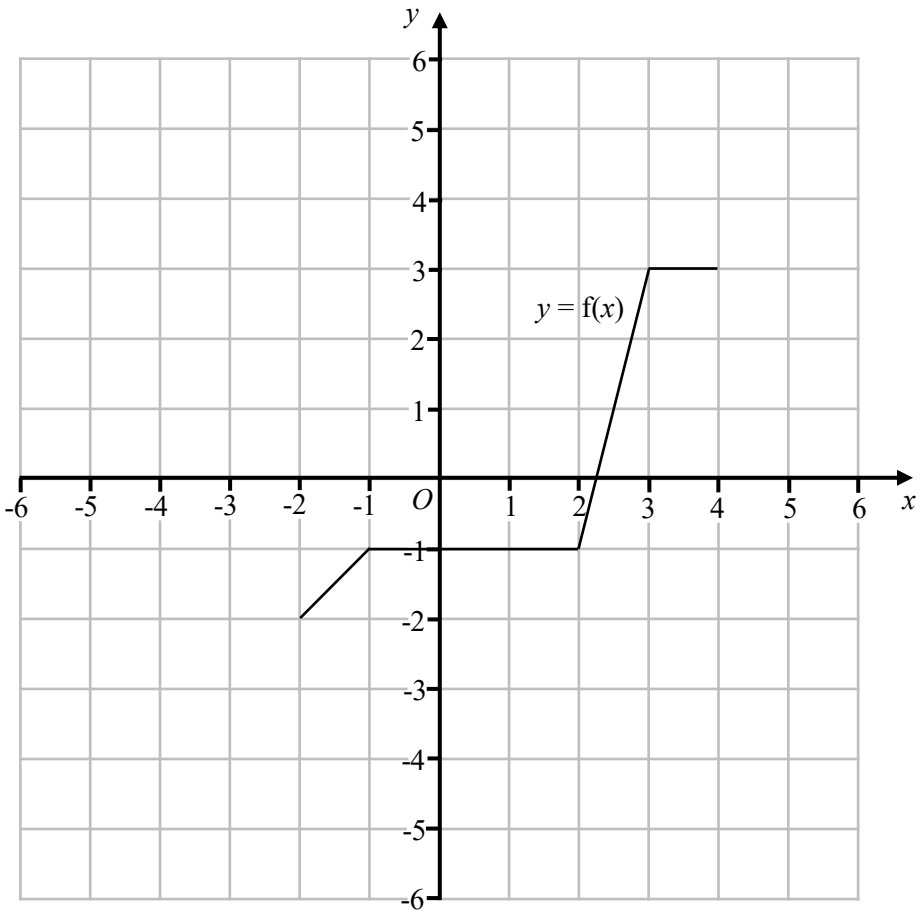
Angle ABC : Angle CDA = 3 : 1
Angle ABC : Angle CAD = 9 : 5
Angle ADO : Angle CDO = n : 1

Work out the value of n.

n = ...

(Total for Question 18 is 4 marks)

19 The graph of $y = f(x)$ is shown on the grid below.



(a) Draw the graph of $y = f(x + 3) - 2$ onto the grid above. **(2)**

Point $A(4, 3)$ is on the graph $y = f(x)$

When the graph of $y = f(x)$ is transformed to the graph with equation $y = -f(x)$ the point A is mapped to point B.

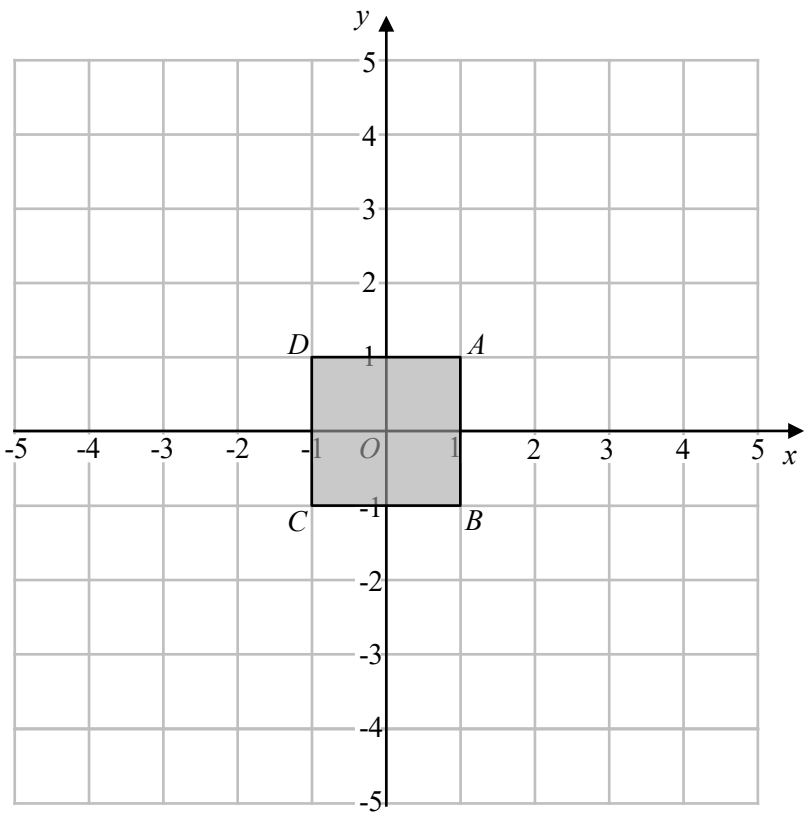
(b) Write down the coordinates of point B.

(..... , ...)

(2)

(Total for Question 19 is 4 marks)

20



$A = (1, 1)$
$B = (1, -1)$
$C = (-1, -1)$
$D = (-1, 1)$

Square $ABCD$ is transformed by a reflection in the line $y = x$

(a) Write down the letters of the points A, B, C or D that remain invariant.

.....

(1)

Instead, square $ABCD$ is transformed by a reflection in the line $x = 1$ followed by a reflection in the line $y = -1$

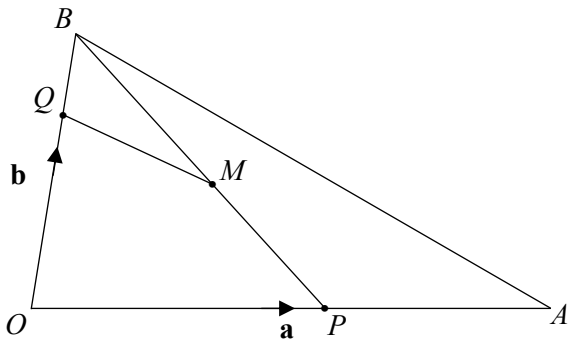
(b) Write down the letters of the points A, B, C or D that remain invariant.

.....

(1)

(Total for Question 20 is 2 marks)

21 OAB is a triangle.



$\overrightarrow{OA} = \mathbf{a}$ $\overrightarrow{OB} = \mathbf{b}$

P is the point on the line OA such that $OP : OA = 3 : 5$
M is the midpoint of PB
Q is the point on the line OB such that MQ is parallel to AB.

$OQ : QB = k : 1$

Work out the value of k.

$k =$ .....

(Total for Question 21 is 5 marks)

TOTAL FOR PAPER IS 80 MARKS