

MATHEMATICS: PAPER II

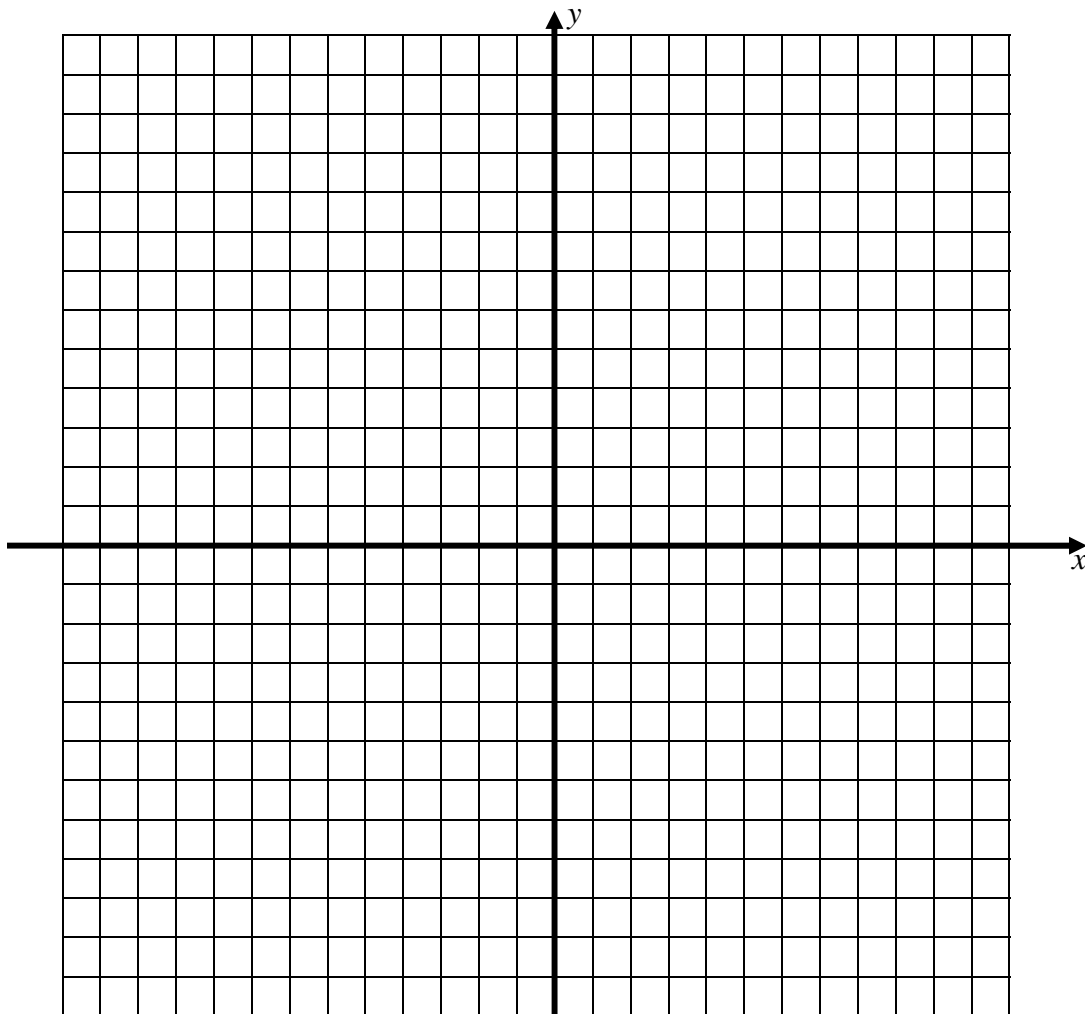
EXAMINATION NUMBER

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ANSWER BOOKLET

QUESTION 1

- (d) Two circles with equations $(x-3)^2 + (y-5)^2 = 25$ and $(x-7)^2 + (y-5)^2 = 9$ intersect in two points. Sketch the circles in the grid below and hence determine the equation of the line passing through these two points. As a scale, use one block to represent one unit. The circles can be drawn freehand.



The equation of the line passing through the points of intersection of the circles is given by:

_____ .

QUESTION 2

In each case,

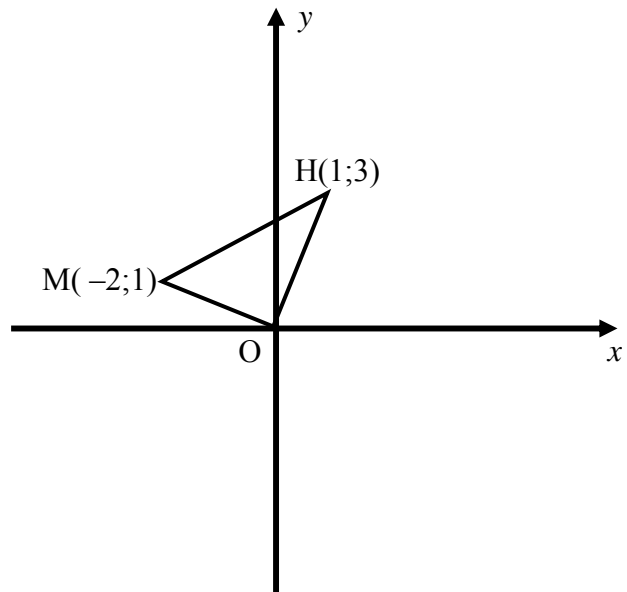
- On each set of axes given, draw the image of ΔMHO according to the rule given. Label your image $\Delta M'H'O'$, and include the co-ordinates of the transformed points.
- Identify the type of transformation.
- Give the value of $\frac{\text{Perimeter of } \Delta MHO}{\text{Perimeter of } \Delta M'H'O'}$

(a) $(x; y) \rightarrow (-y; x)$

Transformation Type: _____

$\frac{\text{Perimeter of } \Delta MHO}{\text{Perimeter of } \Delta M'H'O'} =$

_____.



(4)

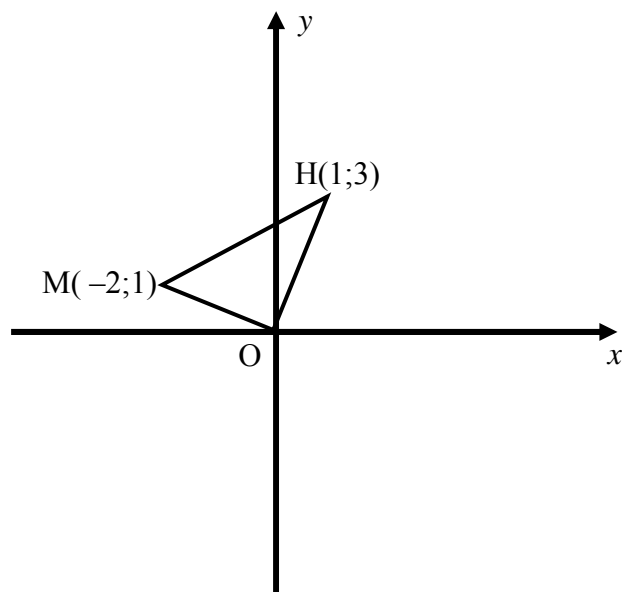
(b) $(x; y) \rightarrow (2x; 2y)$

Transformation Type: _____

_____.

$\frac{\text{Perimeter of } \Delta MHO}{\text{Perimeter of } \Delta M'H'O'} =$

_____.

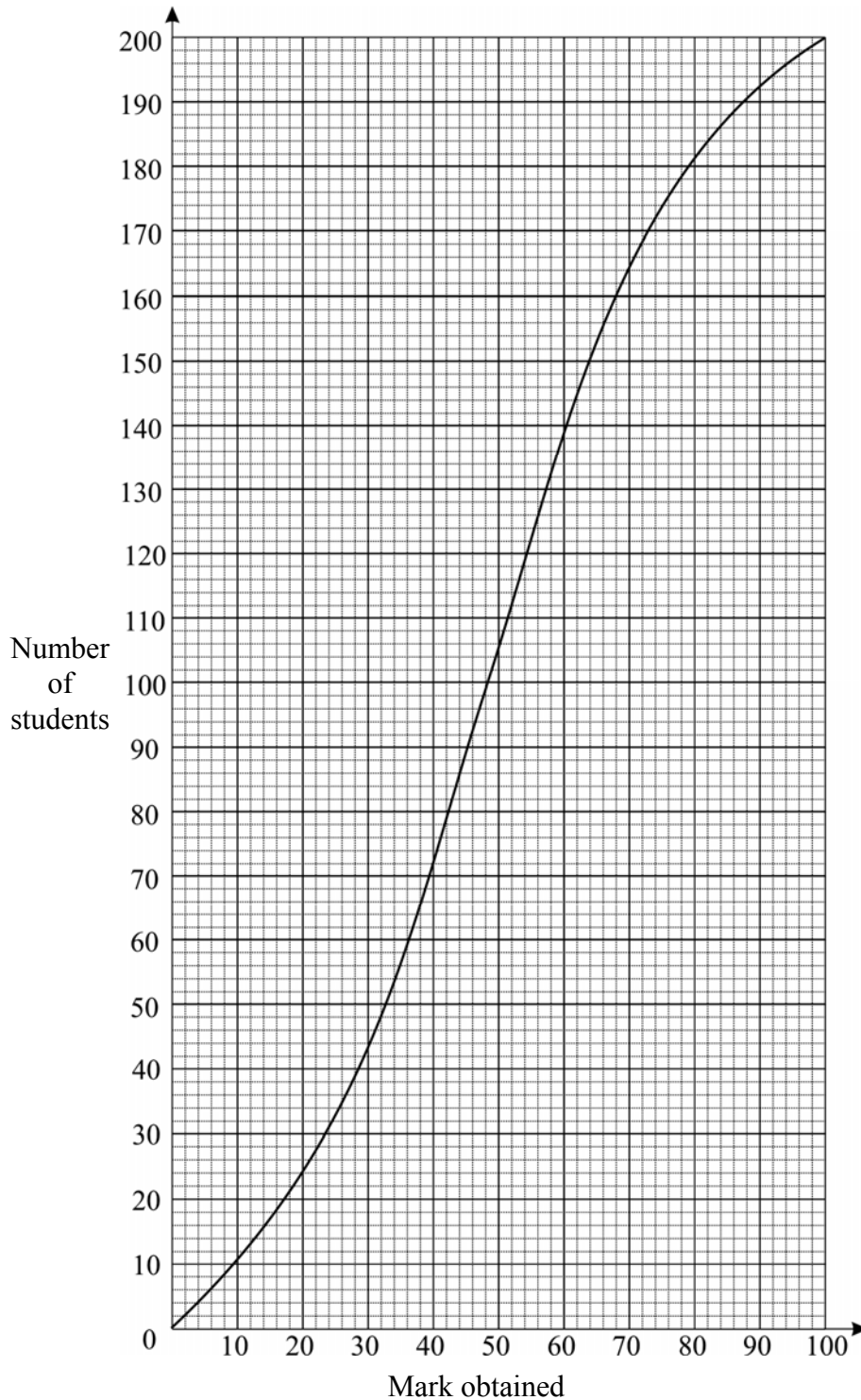


(4)

8 marks

QUESTION 4

- (a) The cumulative frequency curve below shows the marks obtained in an examination by a group of 200 students.



- (1) Use the cumulative frequency curve to complete the frequency table below.

Mark (X)	$0 \leq x < 20$	$20 \leq x < 40$	$40 \leq x < 60$	$60 \leq x < 80$	$80 \leq x < 100$
Number of Students	22				

(4)

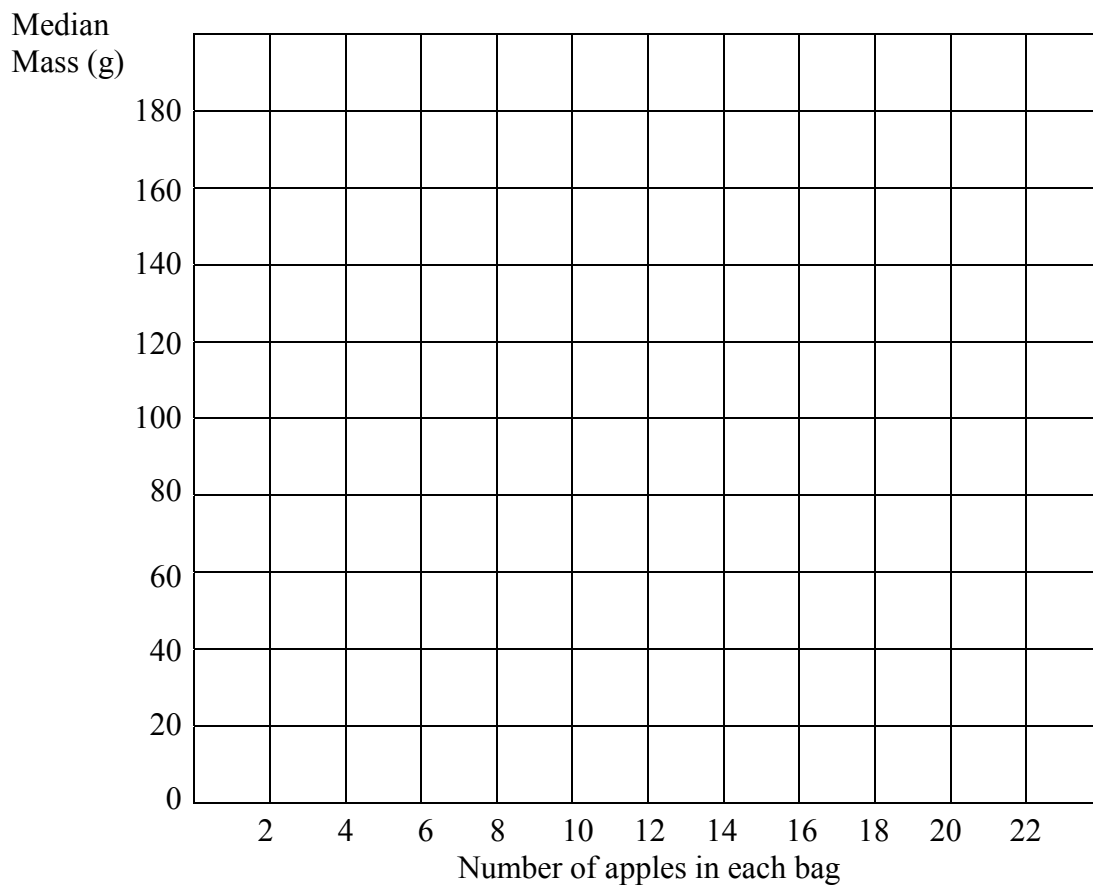
- (2) Forty percent of the students failed. Find the pass mark.

(1)

- (b) A student is investigating the sizes of apples in 2 kg bags. His findings are given in the table below:

Number of apples in the bag(N)	20	16	18	14	14	15	13	10
Median mass of apples to the nearest gram(M)	72	105	110	125	136	142	174	192

- (1) On the grid below draw a scatter diagram to illustrate the data in the table.



(4)

- (2) State the type of relationship (linear, quadratic or exponential) that exists between the number of apples in a bag and the mass of the apples.

(1)

10 marks