

**HIGHER TIER  
MINI PRACTICE EXAM 9**



**CALCULATOR ALLOWED  
20 MINUTES ALLOWED**

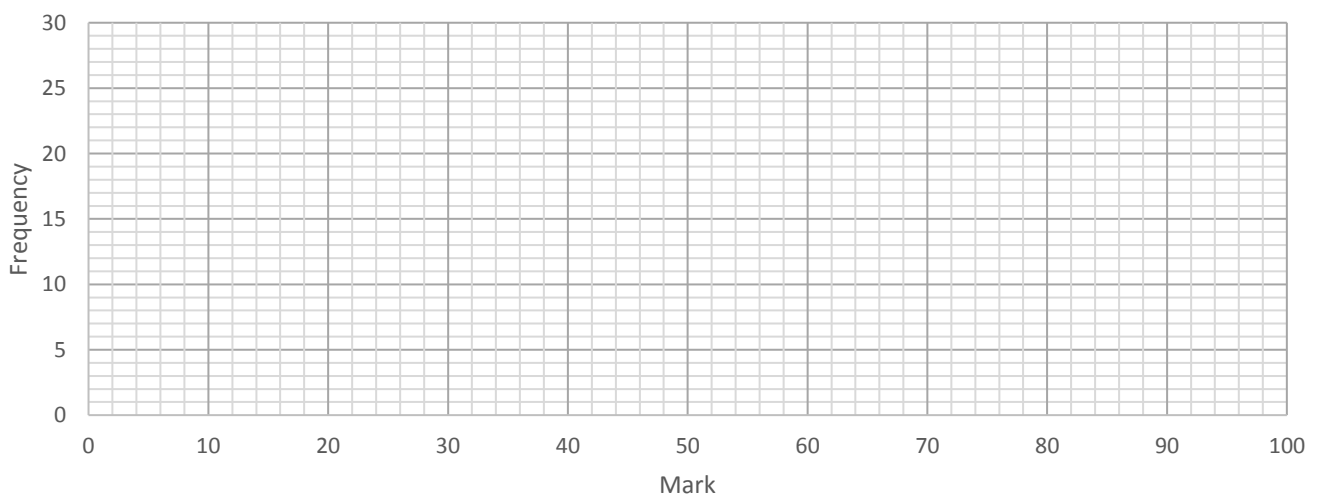
1.  
The frequency table below shows the marks scored by a class of students in a maths test.

<b>Mark (out of 100)</b>	<b>Frequency</b>
$0 < x \leq 20$	2
$20 < x \leq 40$	11
$40 < x \leq 60$	7
$60 < x \leq 80$	6
$80 < x \leq 100$	4

(a) Estimate the mean mark. Give your answer to the nearest whole number.

(4)

(b) On the axis below, plot a cumulative frequency graph of the results.



(2)

(c) Use your cumulative frequency graph to estimate the median mark.

(1)

(d) The pass mark for the test was 32 marks.

Use your cumulative frequency graph to estimate what percentage of the class passed the test. Give your answer to the nearest percent.

(2)

2.

The first four terms of a quadratic sequence are 3, 6, 13 and 24.

Find the  $n$ th term of the sequence.

(3)

3.

Find the co-ordinates of the minimum point of the graph  $y = x^2 - 7x + 12$ .

(4)

4.

A bag contains blue and green marbles.

To begin with, there were 20 more green marbles than blue marbles.

30 blue marbles and 40 green marbles are then removed from the bag, leaving the ratio of blue to green marbles as 3 : 8.

How many marbles were in the bag to begin with?

(4)