GCSE

Mathematics: Non Calculator

Paper 5

Specification EDEXCEL A

Name	

Time allowed
- 30 minutes.

For this paper you must have
- A ballpoint pen with black ink.
- A ruler with millimetre measurements.

Instructions
- Do all rough work in this question booklet.
- Answer **all** the questions.
- You **must** show your working for all questions.

The maximum mark for this paper is 40.

Question	Mark
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
TOTAL	

Grade Boundaries

A* **34**
A **30**
B **25**
C **20**
D **13**

1. (a) A line has equation $4y = 6x + 20$.

Write down the gradient of this line and the coordinates of the point where it crosses the y-axis.

Gradient .....

y-intercept (..... , ...)

(2 marks)

(b) Verify that the point (4, 11) lies on the line.

(2 marks)

2. It is given that **59 × 46 = 2741**.

Use this information to work out the value of

(a) 5.9 × 46

.....

(1 mark)

(b) 590 × 0.46

.....

(1 mark)

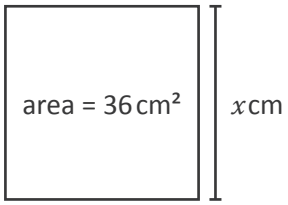
(c) 27.41 ÷ 4.6

.....

(2 marks)

3. Find the length of x in each of the following cases.

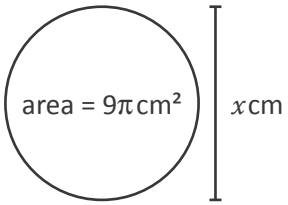
(a)



x = ... cm

(1 mark)

(b)

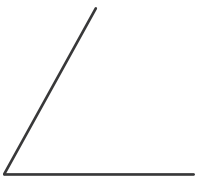


x = ... cm

(2 marks)

4. Angle a is shown below.

Construct the angle bisector for angle a.
Leave in all your construction lines.



Angle a

(2 marks)

Turn over for Question 5 ▶

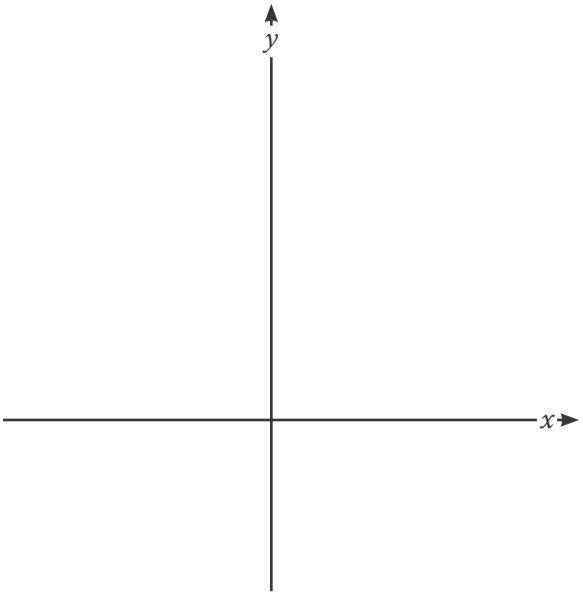
5. (a) (i) Show that $(4x + 2)^2 \equiv 16x^2 + 16x + 4$.

(2 marks)

(ii) Hence, express $\frac{(4x + 2)^2}{4}$ in the form $ax^2 + bx + c$, where the values of a, b and c are to be found.

(2 marks)

6. (a) (i) On the axes below sketch the graph of $y = x^2$. *(2 marks)*

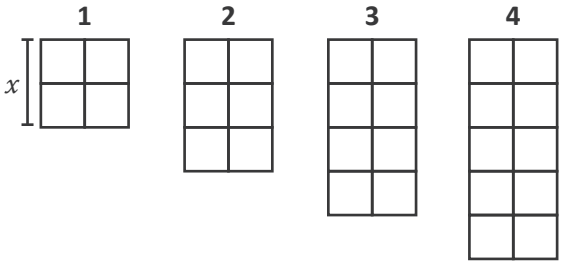


(ii) Complete the columns on the table below to show the values of x and y for the curve $y = x^2$.

y		121
x	5	

(2 marks)

7. The diagram shows the first four in a series of shapes.



The pattern of increasing squares continues.

(a) Calculate how many squares there will there be in the 90th shape.

Number of squares = ...

(2 marks)

(b) It is given that the value of x is 8 cm. Calculate the area of shape **4**.

Area = ...

(3 marks)

Turn over for Question 8 ▶

8. The number of times students were late to school in a week are shown in the table.

Number of times late	0	1	2	3	4
Frequency	60	12	2	5	1

Use the table to answer the following questions.

(a) Write down the mode.

.....

(1 mark)

(b) Write down the median.

.....

(1 mark)

(c) A student is selected at random from the school.

Calculate the probability that the student selected was late fewer than 3 times in the week.

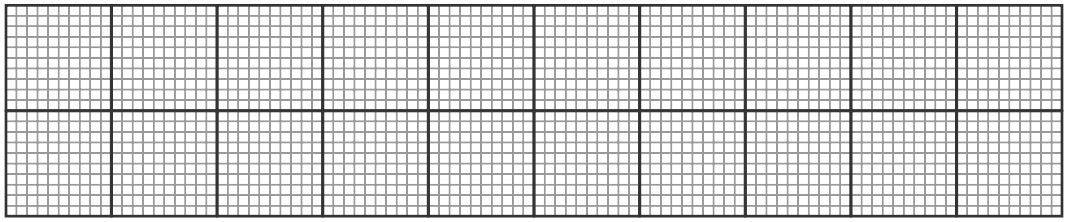
.....

(3 marks)

9. The height of 8 cabbages were measured. The results obtained are shown below.

12 7 9 4 13 11 12 6

On the grid below draw a box-and-whisker plot for this data.



(5 marks)

10. Here is a formula.

$$3t - 24 = \frac{x(t - A)}{x - 3}$$

Make t the subject of the formula.

t = ...

(4 marks)

END OF QUESTIONS

There are no questions printed on this page