

GCSE

Mathematics: Calculator

Paper 2

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.
- A scientific calculator.

Instructions

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

You should give non-exact answers correct to 3 significant figures unless another degree of accuracy is specified in the question or is clearly appropriate.

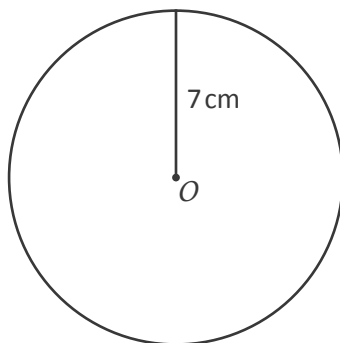
The maximum mark for this paper is 40.

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

Grade Boundaries

A* 31
A 25
B 20
C 14
D 7

1. A circle with centre O has a radius of 7 cm.
Find the circumference of the circle, giving your answer to two decimal places.



_____ Circumference cm (2 marks)

2. Gian collects minerals.
He stores the minerals in cases. Each case can hold a maximum of 12 minerals.
(a) Given that Gian has 67 minerals, work out how many cases Gian will need to store all of his minerals.

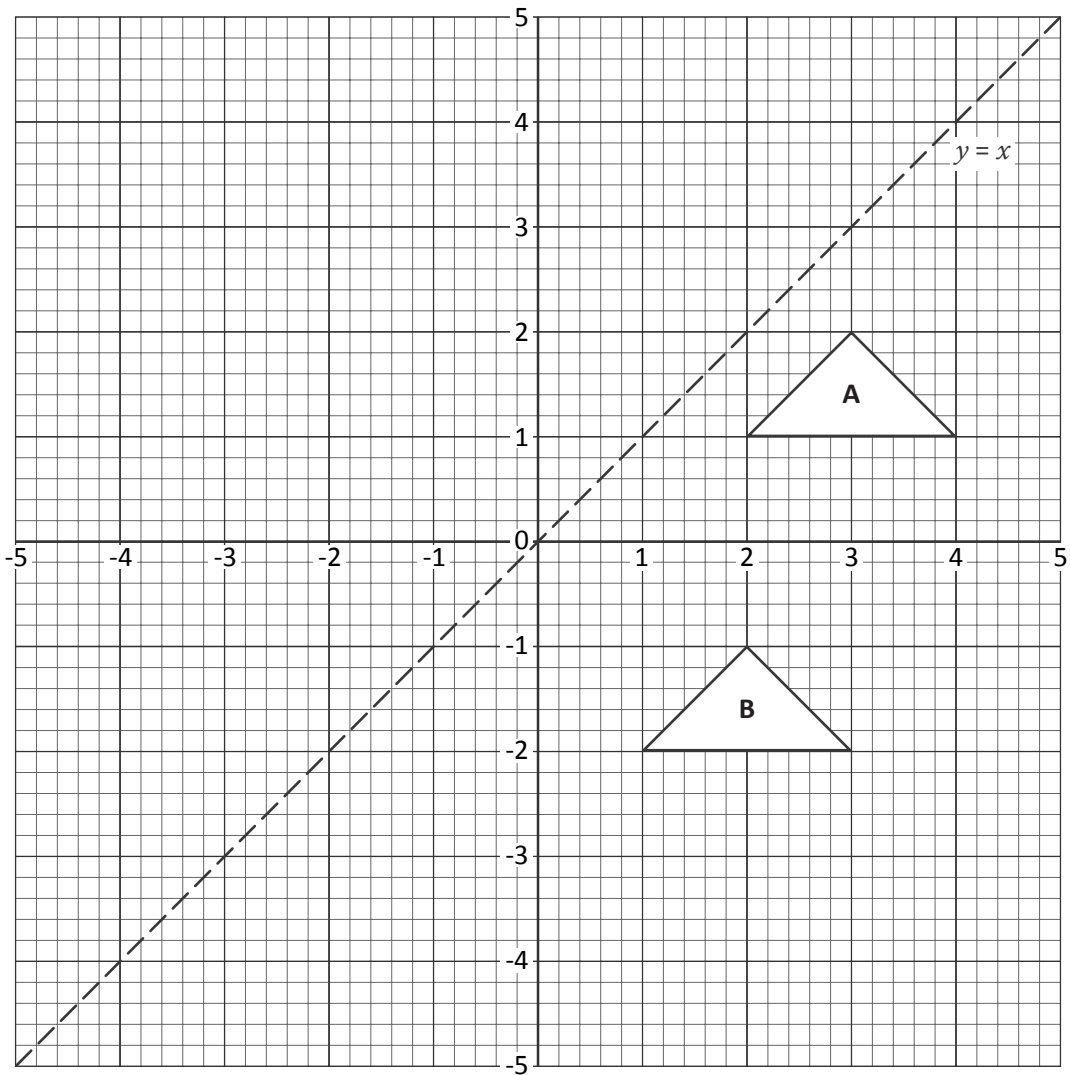
_____ boxes (2 marks)

- (b) Gian goes on a school trip. On the trip he collects more minerals.
He needs another 2 cases to store all the minerals he collects.

Calculate the **minimum** number of minerals Gian collected on the school trip.

_____ minerals (1 mark)

3.



(a) Reflect triangle **A** in the line $y = x$. (2 marks)

(b) Describe the single transformation that maps triangle **A** on to triangle **B**.

.....

.....

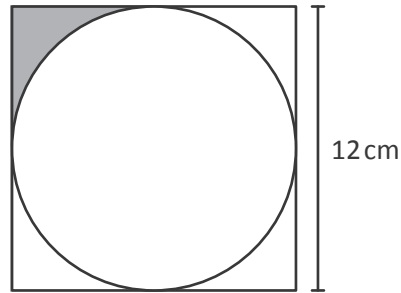
.....

.....

(2 marks)

Turn over for Question 4 ►

4. The diagram shows a circle fitting exactly within a square.



Find the area of the shaded region as a percentage of the area of the square.

..... % (4 marks)

5. (a) $-4 < n \leq 1$
 n is an integer.
Write down all the possible values of n .

..... (1 mark)

- (b) Solve the inequality $6p - 19 > -1$

..... (2 marks)

6. (a) $V = 8bc.$

$V = 120$

$b = 4$

Work out the value of c .

$c = \dots\dots\dots$ (2 marks)

(b) $m = \sqrt{\frac{p+1}{2}}$

Rearrange the formula to make p the subject.

$p = \dots\dots\dots$ (3 marks)

7. £345 000 is invested for 3 years at 2% compound interest.

Calculate the value of investment at the end of the 3 years.

£ $\dots\dots\dots$ (3 marks)

Turn over for Question 8 ►

8. *WeTransferFiles* and *FileSwap* are online services which can be used to exchange large computer files between computers.

The prices *WeTransferFiles* and *FileSwap* charge are given in the table.

	Under 10GB	Over 10GB
<i>WeTransferFiles</i>	£3.00 service charge plus £0.25 for each GB transferred	No service charge plus £0.20 for each GB transferred
<i>FileSwap</i>	£2.50 service charge plus £0.20 for each GB transferred	£2.50 service charge plus £0.15 for each GB transferred

- (a) Calculate how much it would cost to send a 3GB file using *WeTransferFiles*.

£

(1 mark)

- (b) James is on holiday and wants to send a 45GB file to his friend Issac using one of these services.

James wants to spend as little money as possible.
Which service should he use?

Show all your working.

..... (4 marks)

9. Here is a 4×4 grid. Each square contains one of the following four letters.

s t u v

Each letter represents a number.

The **sum** of two rows and two columns has been given.

It is given that v is positive.

Calculate the value of u .

t	$3s$	t	v	10
v^3	t^2	$2t$	$5u$	
t	$-s$	s	t	
s	$-s$	$7s$	$-2s$	15
	$4s$		u	

$u = \dots\dots\dots$ (6 marks)

Turn over for Question 10 ►

10. Here are eight tiles.



Guy takes a tile at random.
He does **not** replace the tile.

He then takes a second tile.

(a) Calculate the probability that both the tiles chosen have a 5 on them.

.....
_____ (2 marks)

(b) Calculate the probability that the number on the second tile is greater than the number on the first tile.

.....
_____ (3 marks)

END OF QUESTIONS