

Name: \_\_\_\_\_

GCSE Maths Practice Paper  
CCEA Unit M7  
Set A  
Paper 2 - Calculator



### Equipment

1. A black ink ball-point pen.
2. A pencil.
3. An eraser.
4. A ruler.
5. A pair of compasses.
6. A protractor.
7. A calculator

### Guidance

1. Read each question carefully.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Question	Mark	Available
1		3
2		4
3		3
4		2
5		4
6		3
7		3
8		4
9		2
10		2
11		4
12		3
13		2
14		2
15		4
16		5
Total		50

### Information

1. Time: 1 hour 15 minutes
2. The maximum mark for this paper is 50.
3. The marks for questions are shown in brackets
4. You may use tracing paper.

1. Here are some patterns made from dots.



Pattern 1



Pattern 2



Pattern 3

(a) Complete the table for Pattern 4.

Pattern Number	1	2	3	4
Number of dots	3	5	7	

(1)

Harry wants to find the number of dots in Pattern number 50.

(b) Write down a method he could use.

.....

.....

(1)

Dots are used to make a different sequence of patterns.  
The first three patterns are shown.



Pattern 1



Pattern 2



Pattern 3

(c) How many dots are needed to make Pattern 6?

.....

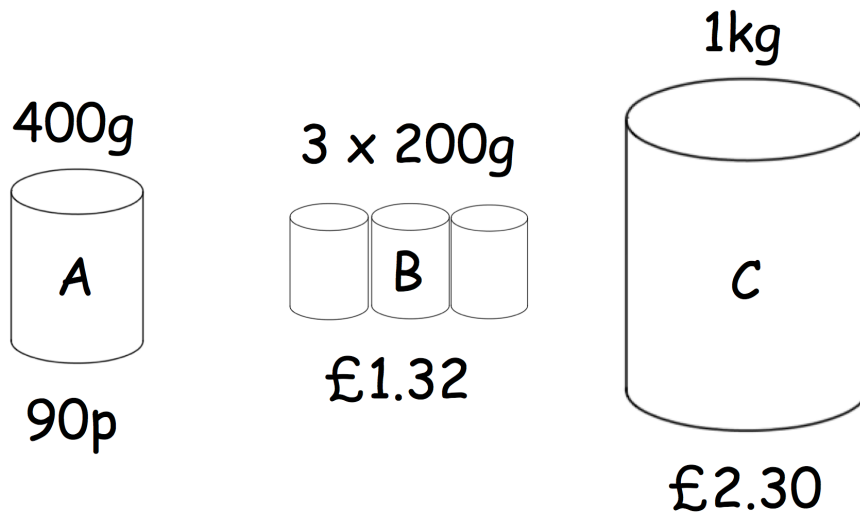
(1)

2. A shop sells baked beans in three different sizes.

Option A: 400g tin for 90p

Option B: 3 x 200g pack for £1.32

Option C: 1kg large tin for £2.30



Which is the best value for money?

3. James has received two job offers.

A job in Milan which pays €49,980 a year.

A job in Boston which pays \$54,400 a year.

The exchange rates were  $\text{£}1 = \$1.28$  and  $\text{£}1 = \text{€}1.19$

Which job offer has the highest salary?

You must show your working.

.....  
(3)

4.



This sign is correct to the nearest hundred.

(a) What is the lowest possible number of people that live in Ballycastle?

.....  
(1)

(b) What is the greatest possible number of people that live in Ballycastle?

.....  
(1)

5. Charlotte and Melissa booked theatre tickets costing £180.

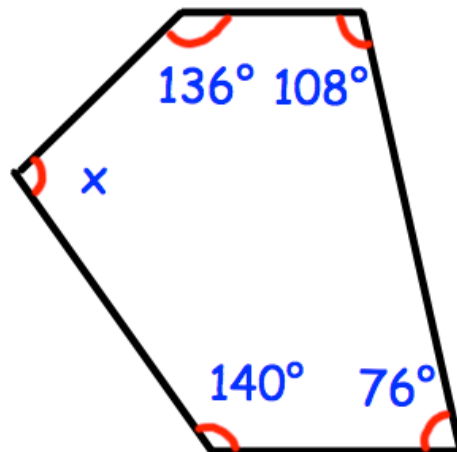
They have a voucher that entitles them to 20% off the total price.

Charlotte and Melissa share the total cost of the tickets in the ratio 5:7.

Work out how much more Melissa pays than Charlotte.

.....  
(4)

6. Shown below is a pentagon.



Work out the size of angle  $x$ .

.....<sup>o</sup>  
(3)

7. Mrs Jenkins is organising a charity raffle.

She sells 3200 tickets for £3 each.

The probability that someone wins a prize is 0.07

Each prize cost £13

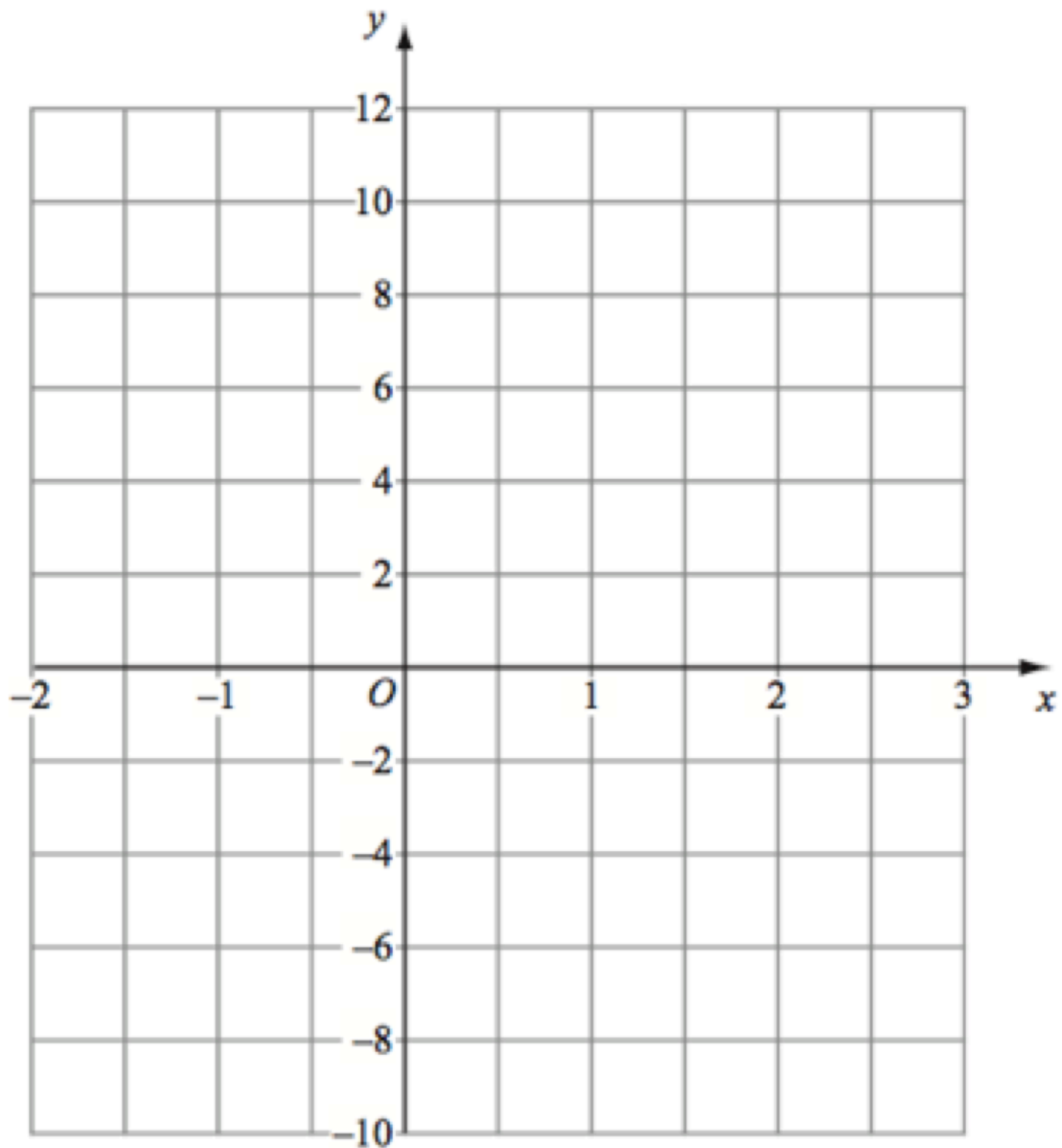
The profit is donated to charity.

Work out how much money Mrs Jenkins donates to charity.

£.....  
(3)

8. (a) Draw the graph of  $y = x^2 + x - 4$  for the values of  $x$  from -2 to 3.

$x$	-2	-1	0	1	2	3
$y$						



(3)

- (b) Use your graph to find estimates of the solutions to the equation  $x^2 + x - 4 = 2$

$x = \dots\dots\dots$  or  $x = \dots\dots\dots$

(1)



9. A sequence of numbers is shown.

5      8      11      14      17      ...      ...

Find an expression for the  $n$ th term of the sequence.

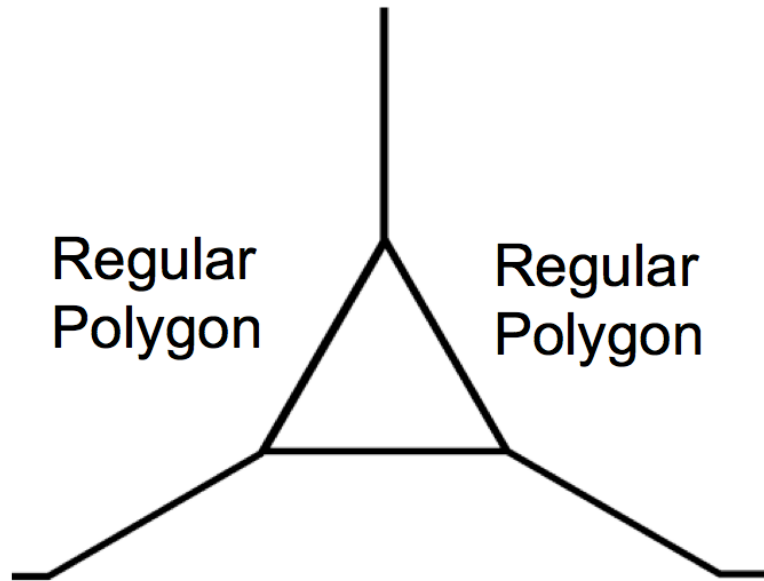
.....  
(2)

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10. Simplify  $(5w^7)^3$

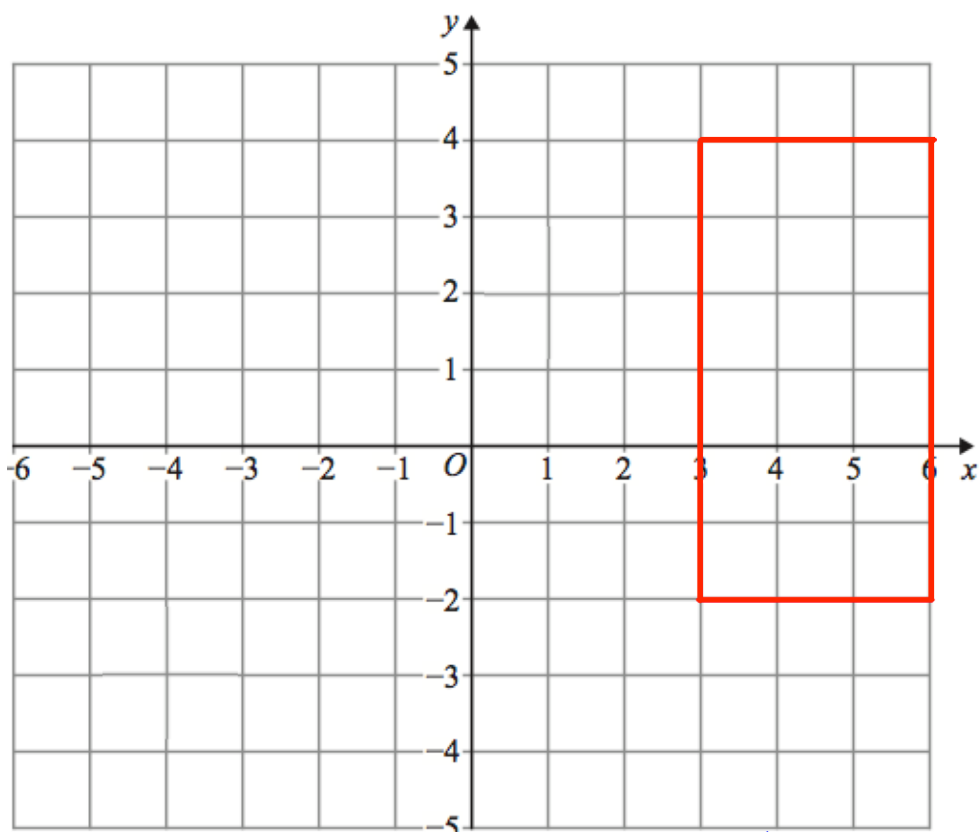
.....  
(2)

11. Shown below are two identical regular polygons and an equilateral triangle.



Calculate the number of sides each regular polygon has.

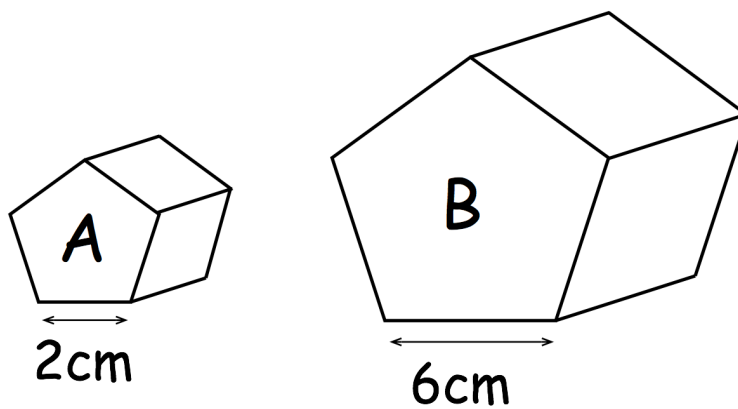
12.



Draw the enlargement of the rectangle with scale factor  $\frac{1}{3}$  and centre of enlargement  $(-3, 1)$ .

(3)

13. Shown below are two similar prisms, A and B.



The volume of prism A is  $37.5\text{cm}^3$

Work out the volume of prism B.

..... $\text{cm}^3$   
(2)

14. Megan creates a 4-digit code for her debit card.  
The first digit is 2  
The 4-digit code is **odd**.

How many possible codes are there?

.....  
(2)

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15. Trevor is taking part in a quiz.  
The probability that he answer a question correctly is  $\frac{3}{5}$

Trevor is asked two questions.

(a) Calculate the probability that Trevor answers both questions correctly.

.....  
(2)

(b) Calculate the probability that Trevor answers both questions incorrectly.

.....  
(2)

16. C is directly proportional to the square root of y.  
When  $C = 12.8$ ,  $y = 16$ .

(a) Express C in terms of y.

$$C = \dots\dots\dots$$

**(3)**

(b) Find y when  $C = 464$

$$y = \dots\dots\dots$$

**(2)**