



FOUNDED 1900

**THE ENGLISH SCHOOL**  
A SECOND CENTURY OF EXCELLENCE

**THE ENGLISH SCHOOL**

**ENTRANCE EXAMINATIONS 2015**

**MATHEMATICS**

**FIRST FORM**

**Time allowed: 1 hour and 30 minutes**

- Answer ALL questions.
- Show all necessary working on the question paper in the spaces provided and write your answers in the appropriate places.
- The marks for each question are given at the end of the question.
- There are 30 questions in this paper.
- The total number of marks is 100.
- If you cannot do a particular question, move to the next question without losing time.
- **CALCULATORS ARE NOT ALLOWED.**
- **DO NOT WRITE IN THE RIGHT HAND MARGIN**

1. Evaluate the following:

(a)  $15.15 - 14.89$

Answer: ..... (1)

(b)  $483 \div 21$

Answer: ..... (2)

(c)  $1.1 \times (1.2 + 1.3) \times 2$

Answer: ..... (2)

(d)  $\frac{1}{3} + \frac{1}{3} \times \frac{1}{3} + \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3}$

Answer: ..... (3)

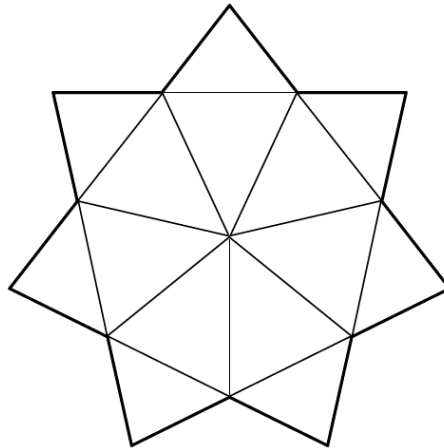
( Total 8 marks )

Q1

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2. Shade  $\frac{2}{7}$  of the shape below.

(2)



( Total 2 marks )

Q2

3.

- (a) Paula was given €50 for her birthday. She used some of this money to buy a scarf for €15.95 and a hat for €19.45. How much of her birthday money does she have left?



Answer: € ..... (2)

- (b) Korinna bought two books from a shop, and paid a total of €28.50. One book cost 90 cents more than the other. What was the price of the cheaper book?



Answer: € ..... (2)

( Total 4 marks )

Q3

4.

- (a) Eleanor is 12 years and 3 months old.  
Her brother Jack is 3 years and 10 months younger than Eleanor.  
How old is Jack? Give your answer in years and months.

Answer: ..... (2)

- (b) On her birthday last year, Eleanor was 140 cm tall. When she measured herself on her birthday today, she calculated that she had grown by 20% of the height she was a year ago.  
How tall is she now?

Answer: .....cm (2)

- (c) Jack is now 105 cm tall, having grown by one sixth of his height a year ago.  
How tall was Jack one year ago?



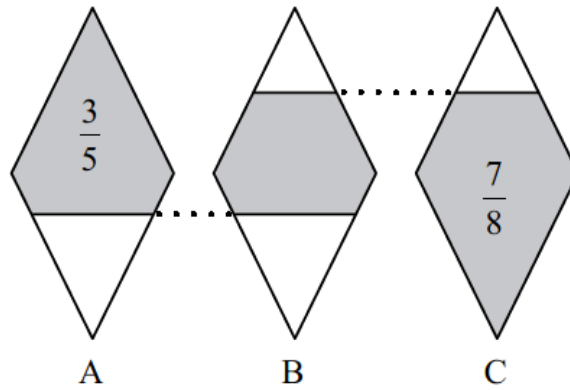
Answer: .....cm (2)

( Total 6 marks )

Q4

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5. The diagram shows three identical shapes A, B and C. (*The diagram is not accurately drawn*)  
 Three fifths of shape A is shaded.  
 Seven eighths of shape C is shaded.



What fraction of shape B is shaded?

Answer: ..... (2)

( Total 2 marks )

Q5

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6. Write down the missing term in each of the sequences below:

(a) 4, 7, ....., 13, 16, 19 (1)

(b) 50, 40, ....., 23, 16, 10 (1)

(c) 2, 6, ....., 54, 162, 486 (1)

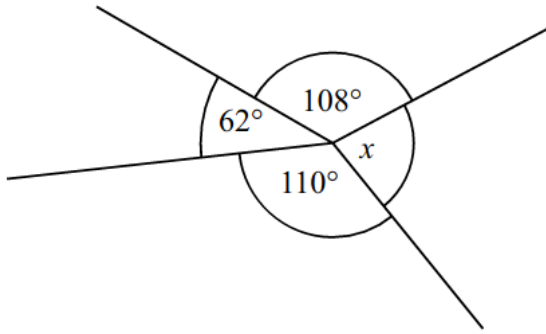
( Total 3 marks )

Q6

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Leave blank

7. Work out the value of  $x$ . (*The diagram is not accurately drawn*)

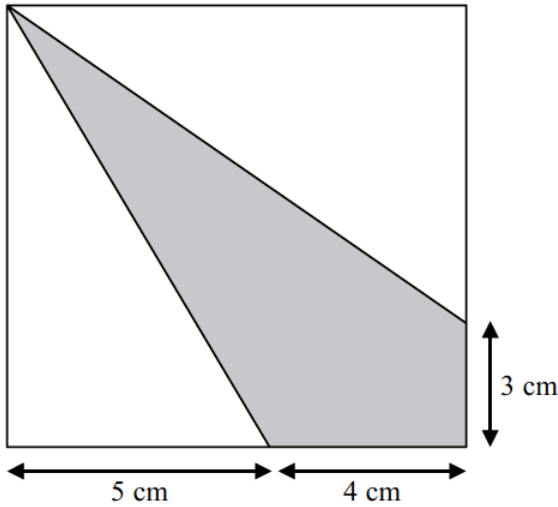


$x = \dots\dots\dots^\circ$  (2)

(Total 2 marks)

Q7

8. The diagram shows a shaded quadrilateral inside a square.  
(*The diagram is not accurately drawn*)



Work out the area of the shaded quadrilateral.

Answer:  $\dots\dots\dots\text{ cm}^2$  (3)

(Total 3 marks)

Q8

Leave blank

9. In a bag of fifteen marbles six of them are green, two are yellow and the rest are purple.

(a) What fraction of the marbles is purple?

Answer: ..... (2)

(b) If the two yellow marbles are both removed, what fraction of the remaining marbles is green?

Answer: ..... (2)

Q9

( Total 4 marks )

10. The cost of three pizzas is €26.85.  
Work out the cost of five of these pizzas.



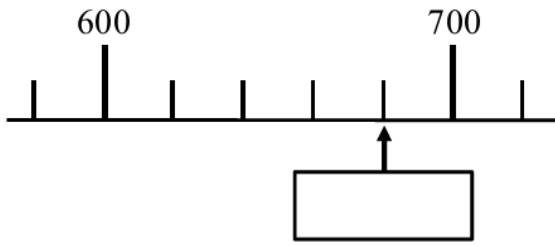
Answer: € ..... (2)

Q10

( Total 2 marks )

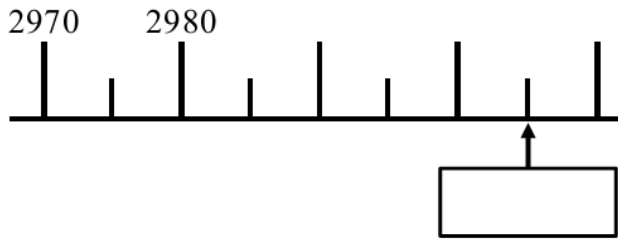
11. Here are parts of four different number lines.  
Write in each box the number indicated by the arrow.

(a)



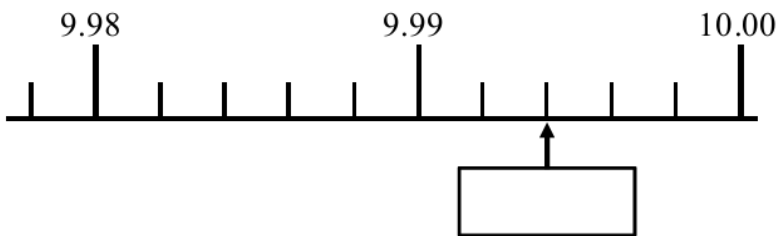
(1)

(b)



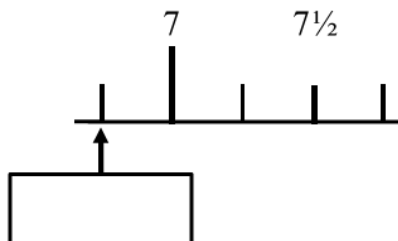
(1)

(c)



(1)

(d)



(1)

( Total 4 marks )

Q11

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12. A recipe for 18 waffles needs the following ingredients:

- 375 g of plain flour
- 3 tablespoons of caster sugar
- 3 eggs
- 1½ teaspoons of baking powder
- 420 ml of milk

(a) What mass of plain flour is needed in order to make 24 waffles?

Answer: ..... g (2)

A chef has 10 eggs only. He has plenty of all the other ingredients.

(b) What is the largest number of waffles which he can make?



Answer: ..... (2)

( Total 4 marks )

Q12

13. Mark has 27 vehicles to service at his garage.  
Some are cars (4 wheels) and the rest are motorcycles (2 wheels).  
Altogether, the 27 vehicles have 78 wheels.  
How many cars does Mark have to service?

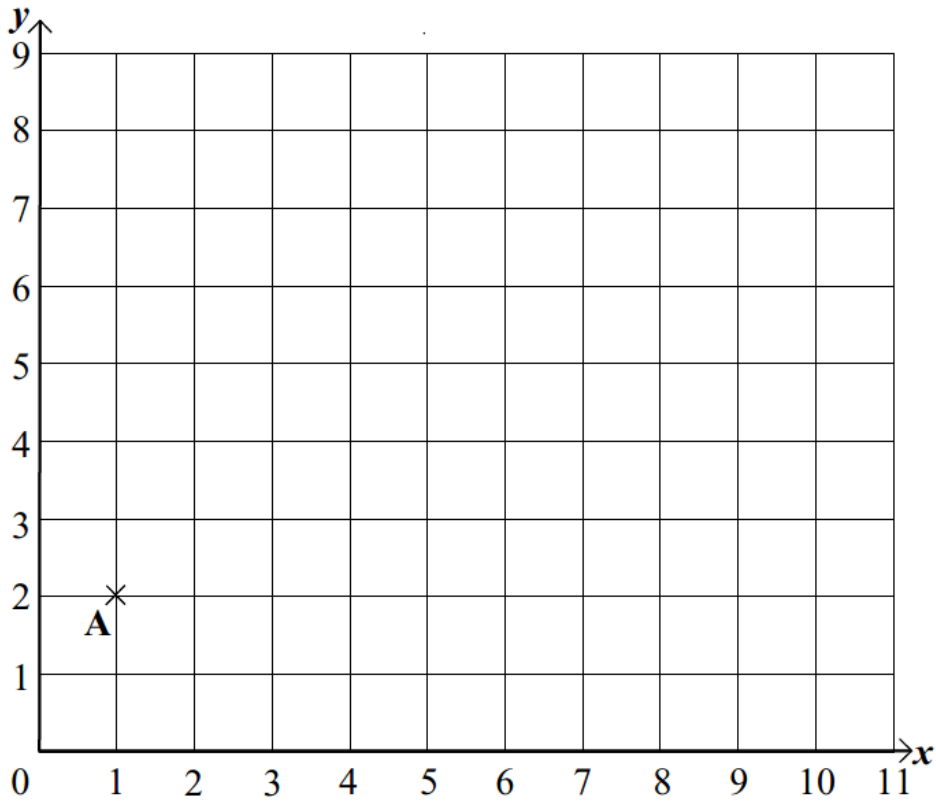


Answer: ..... cars (2)

( Total 2 marks )

Q13

14. Point **A** is plotted on the coordinate grid below.



Point **A** has coordinates (1, 2)

Point **B** has coordinates (7, 8)

- (a) On the grid above, plot and label point **B**. (1)

Point **M** is exactly halfway between points **A** and **B**.

- (b) What are the coordinates of point **M**?

Answer: (....., ..... ) (1)

- (c) Write down the coordinates of any other point which is exactly the same distance from point **A** as it is from point **B**.

Answer: (....., ..... ) (1)

Q14

( Total 3 marks )

Leave blank

15. Use the fact that  $16 \times 428 = 6848$ , to work out:

(a)  $16 \times 430$

Answer: ..... (1)

(b)  $26 \times 428$

Answer: ..... (2)

(c)  $6848 \div 32$

Answer: ..... (1)

( Total 4 marks )

Q15

16. An apple, two oranges and three pears together cost €3.03.  
An orange and a pear together cost 95 cents.

(a) What is the cost of an apple and a pear together?

Answer: € ..... (2)

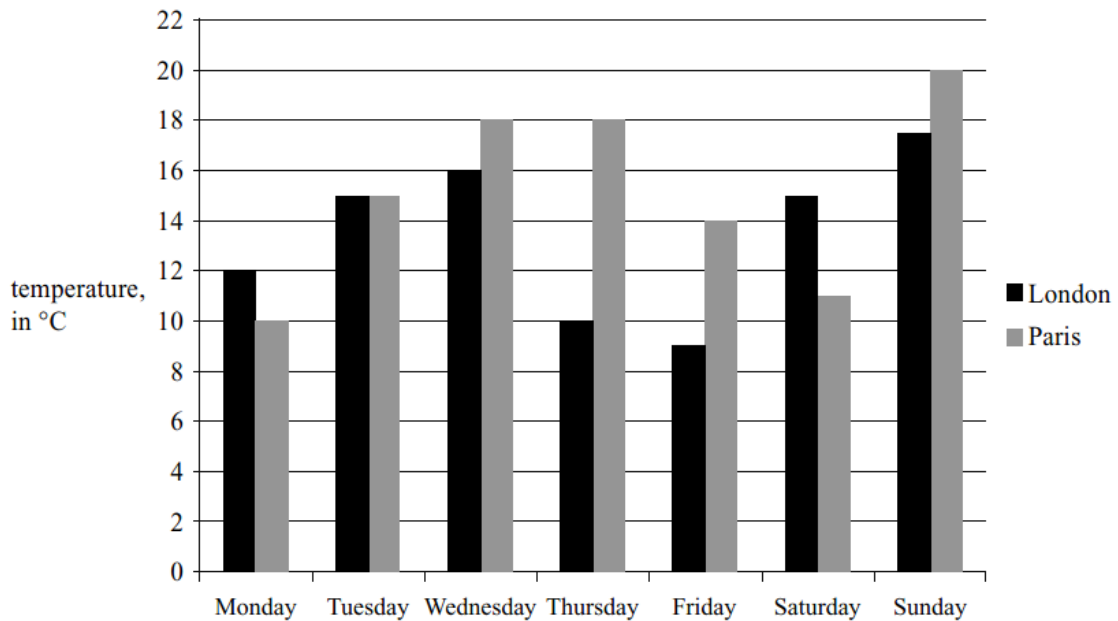
(b) How much more does an apple cost than an orange?

Answer: ..... cents (1)

( Total 3 marks )

Q16

17. The bar chart below shows the midday temperatures each day in London and Paris during the same week one spring.



(a) What was the temperature in Paris at midday on Monday?

Answer: ..... °C (1)

(b) What was the lowest temperature at midday that week in London?

Answer: ..... °C (1)

(c) How many degrees colder was it at midday in Paris on Saturday than on Thursday?

Answer: ..... (1)

(d) On which day was there the greatest difference between the midday temperatures in London and Paris?

Answer: ..... (1)

( Total 4 marks )

Q17

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18. A cyclist cycles 30 kilometres in 2 hours.  
How many minutes does it take him to cycle 500 metres at the same rate?

Answer: ..... minutes (2)

( Total 2 marks )

Q18

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19. There are 60 animals at a rescue centre.  
30% of the animals are cats.



(a) How many cats are there?

Answer: .....cats (2)

38 of the animals are dogs.  
The rest of the animals are horses.

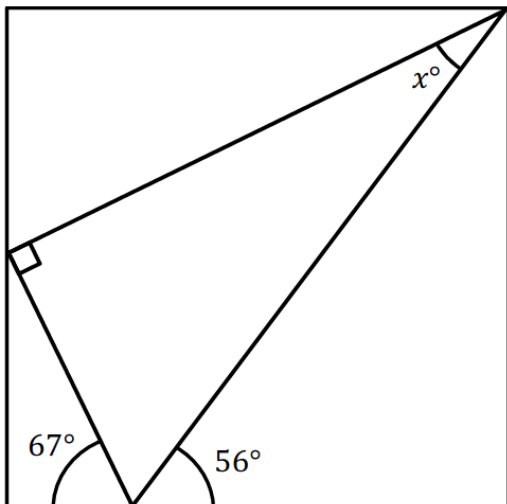
(b) Work out how many horses there are at the rescue centre.

Answer: .....horses (2)

( Total 4 marks )

Q19

20. The right angled triangle is inside a rectangle. (*The diagram is not accurately drawn*)  
Calculate the value of angle  $x$ .

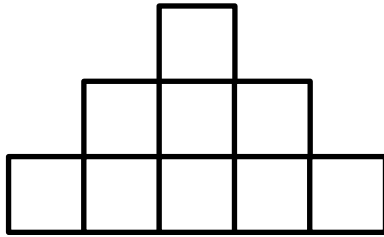


$x = \dots\dots\dots^\circ$  (2)

( Total 2 marks )

Q20

21. The shape below is made from nine identical squares.  
(The diagram is not accurately drawn)



The perimeter of the shape is 160 cm.

(a) Find the length of the side of each small square.

Answer: .....cm (2)

(b) Find the area of each small square.

Answer: .....cm<sup>2</sup> (1)

(c) Find the area of the whole shape.

Answer: .....cm<sup>2</sup> (1)

( Total 4 marks )

Q21

22. Anthony, Iliyas and Hugo have 28 sweets between them.  
Hugo has half as many sweets as Iliyas.  
Anthony has two times as many sweets as Iliyas.

How many sweets does Anthony have?



Answer: ..... (2)

( Total 2 marks )

Q22

23. The diagram below shows a pattern of numbers.

23	34	11
31		56
8	53	45

(a) Find the sum of the numbers on the grey squares.

Answer: ..... (1)

(b) Find down the sum of the numbers on the white squares.

Answer: ..... (1)

In these patterns:

- the sum of the numbers on opposite grey squares is the same.
- the numbers on a grey square are equal to the sum of the numbers on the two white squares on either side.

(c) In the diagram below, the sum of the numbers on opposite grey squares is 133. Use this information to complete the diagram below.

35		19
61		

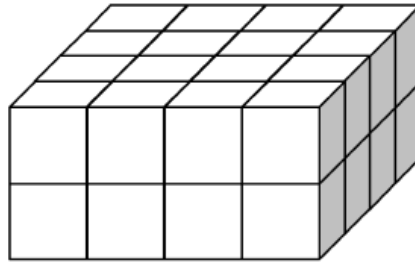
(3)

( Total 5 marks )

Q23

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24. Robert has 100 identical cube bricks. He uses some of his bricks to make the cuboid shown below.



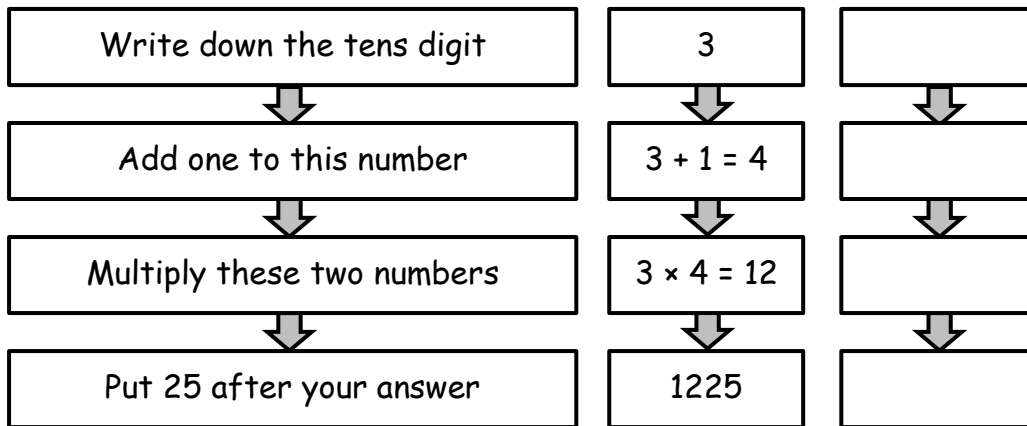
From his remaining bricks, he uses some to make the largest cube that he can. How many bricks does he use to make the cube?

Answer: ..... (2)

( Total 2 marks )

Q24

25. The chart shows how to square a two-digit number ending in five. For example,  $35^2 = 1225$ .



- (a) Complete the chart to find  $65^2$ . (1)
- (b) What two-digit number is squared to give 7225? (1)

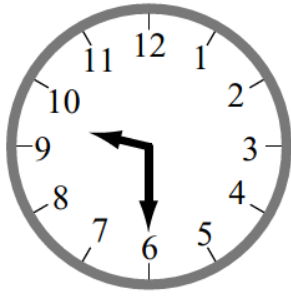
Answer: ..... (1)

( Total 2 marks )

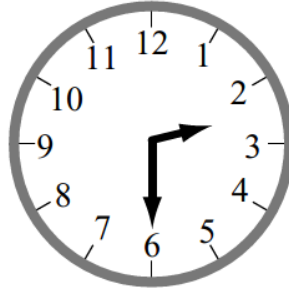
Q25



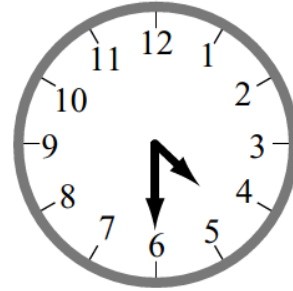
26. The time in New York is 5 hours behind the time in London.  
The time in Larnaca is 2 hours ahead of the time in London.



New York



London



Larnaca

(a) When it is 6.42 pm in London, what time is it in New York?

Answer: ..... (1)

(b) When it is 10.37 am in New York, what time is it in Larnaca?

Answer: ..... (1)

(c) An aeroplane leaves Larnaca at 6.00 pm on Tuesday and travels to New York.  
The whole journey takes 14 hours.  
At what time and on which day does it arrive in New York?

Time: ..... (1)

Day: ..... (1)

( Total 4 marks )

Q26

27. 42557 people watched a baseball match.  
Round this number to the nearest hundred.



Answer: ..... (1)

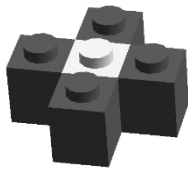
( Total 1 mark )

Q27

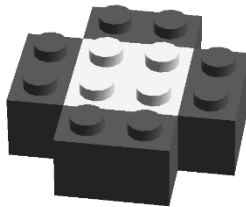
28. Stephanie has one type of LEGO brick in two different colours. The bricks are shown below.



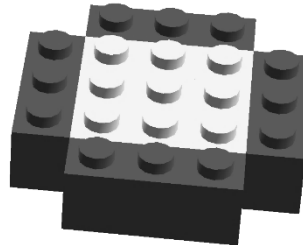
She makes a pattern using these bricks. These are the first three.



pattern 1





pattern 2



pattern 3

(a) Complete the table showing the numbers of the two different colours used in each pattern.

(2)

pattern		1	2	3	4
white		1			
grey		4			

(b) How many white bricks are there in pattern number 7?

Answer: ..... (1)

(c) How many grey bricks are there in pattern 7?

Answer: ..... (1)

(d) One pattern has 140 bricks in total. Which pattern number is this?

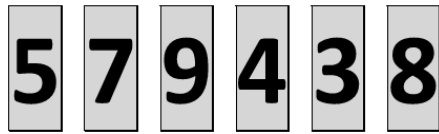
Answer: ..... (2)

( Total 6 marks )

Q28

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29. Marina has the six number cards shown below.



The cards can be placed together to form a number.  
For example, using just 4 cards, the smallest four digit number which can be made is 3457.

(a) Using all six cards, what is the largest even number which can be made?

Answer: ..... (1)

(b) Using any number of the cards, what is the number closest to 5000 which can be made?

Answer: ..... (1)

(c) Write down the largest 4-digit multiple of 4 which can be made.

Answer: ..... (1)

( Total 3 marks )

Q29

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30. My money box contains an equal number of 5 cent, 10 cent and 20 cent coins and no other coins.  
How many coins are there altogether if there is €4.90 in the money box?

Answer: .....coins (3)

( Total 3 marks )

Q30

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TOTAL FOR PAPER: 100 MARKS

END