

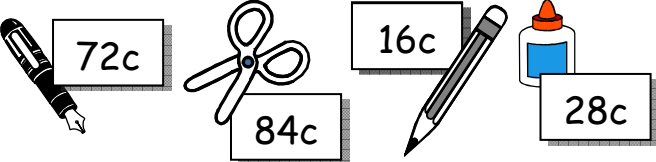
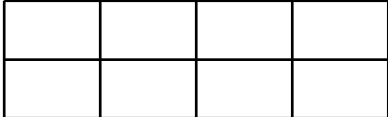

# Junior Lyceum Entrance Examination into Form One

MAY 2009

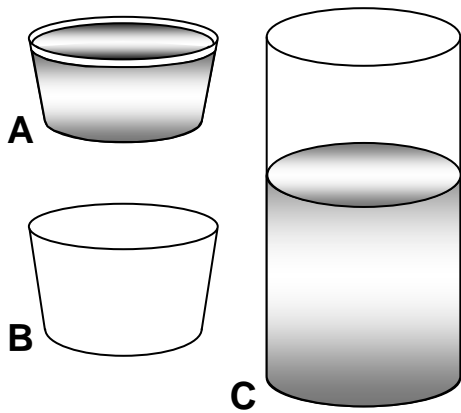
## MATHEMATICS

### ANSWER ALL QUESTIONS

- Questions 1 to 10 ... 1 mark each.  
Questions 11 to 19 ... 4 marks each.  
Questions 20 to 28 ... 6 marks each.

|   |   |
|---|---|
| <p>1. Find the <b>total cost</b> of these items.</p>  <p>€ _____</p> | <p>2. Tick <input checked="" type="checkbox"/> the multiplication whose estimate is 7200.</p> <p><math>63 \times 99</math> <input type="checkbox"/></p> <p><math>49 \times 31</math> <input type="checkbox"/></p> <p><math>93 \times 78</math> <input type="checkbox"/></p> |
| <p>3. <math>0.9 \text{ kg} + 1.7 \text{ kg} + 2.3 \text{ kg}</math></p> <p>= _____ kg</p>   | <p>4. <b>Shade</b> 25% of the shape.</p>    |
| <p>5. Which of these is <b>not a square number</b>?</p> <p>25 9 16 18 81</p> <p>_____</p>   | <p>6. Complete:</p> <p><math>\frac{3}{4}</math> of 1000 metres = _____ m</p>  |
| <p>7. Write down a number that lies <b>between</b> 0.5 and 0.6.</p> <p>_____</p>  | <p>8. Fill in with an <b>even whole</b> number such that <math>65 + \underline{\hspace{2cm}}</math> is less than 71.</p>  |
| <p>9. <b>Mark</b>, with an arrow, 5.87 on the number line.</p>     | <p>10. Fill in.</p> <p>Half of 56 = 3 more than _____</p>   |

11. There are 150 ml of water in container **A**. There are 580 ml of water in container **C**. Container **B** is **empty**. Its capacity is 275 ml. Tracy pours all the water that is in container **A** into container **C**. She then pours 275 ml of water from container **C** into container **B**. Work out how many millilitres of water are left in container **C**.

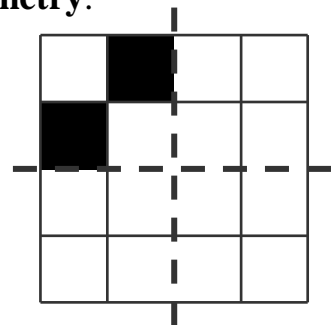


\_\_\_\_\_ ml

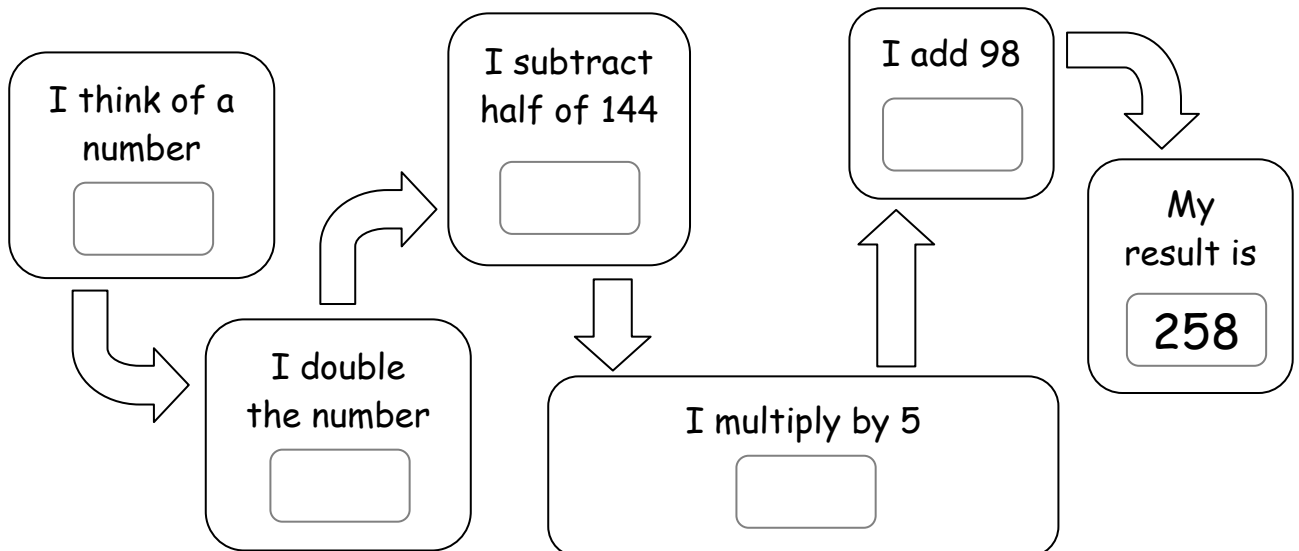
12. a) Look at these letters and fill in.

**H M G E X T**

- i) Letter \_\_\_\_\_ has **no lines of symmetry**.  
 ii) Letter \_\_\_\_\_ has **more than two lines of symmetry**.
- b) The **dotted lines** are mirror lines. Complete the pattern.



13. Find the number I start with.



14. a) Work out the **total amount** of money in the piggy banks .

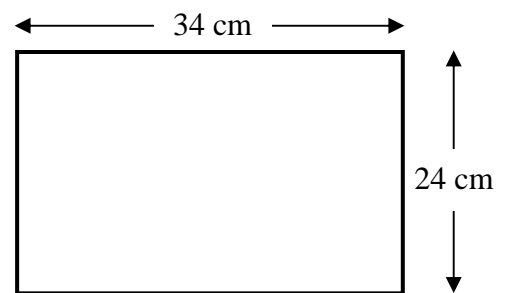


€ \_\_\_\_\_

b) Work out the **mean** (average) amount in each piggy bank.

€ \_\_\_\_\_

15. a) Work out the **perimeter** of the rectangle.



\_\_\_\_\_ cm

b) The **area of a square** is  $81 \text{ cm}^2$ .

Ian says that the **length** of one of the sides of the square is 8 cm.

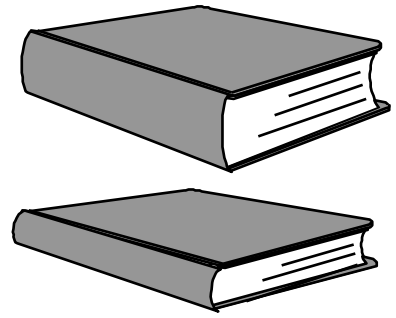
Is he correct? \_\_\_\_\_ (YES / NO).

Give a reason for your answer.

\_\_\_\_\_

\_\_\_\_\_

16. The two books in this picture together weigh 675 g.  
One book is **twice** as **heavy** as the other.  
Work out the weight of the **heavier** book.



\_\_\_\_\_ g

- 
17. a) Maggie and Ian are collecting pictures of famous footballers.  
Ian has 56 pictures.  
Maggie has  $\frac{4}{7}$  of what Ian has.  
Work out how many pictures Maggie has.

\_\_\_\_\_ pictures

- b) Maggie collects another 3 pictures.  
Write the number of pictures Maggie now has as a **fraction** of Ian's pictures.  
Give your answer in its **simplest form**.

18. a) Here are some number cards.



Use two of the cards above to make a fraction which is **less than**  $\frac{1}{2}$ .

|  |
|--|
|  |
|  |

b) In a class there are 30 pupils.

On Monday only 80% of them came to school.

Work out the number of pupils that came to school on Monday.

\_\_\_\_\_ pupils

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19. A school minivan makes the same trip every day.

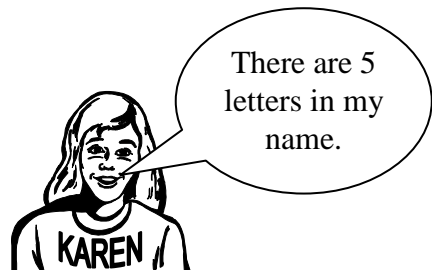
In January the minivan makes 18 trips covering a **total distance** of 414 km.

How long is **each trip**?

\_\_\_\_\_ km

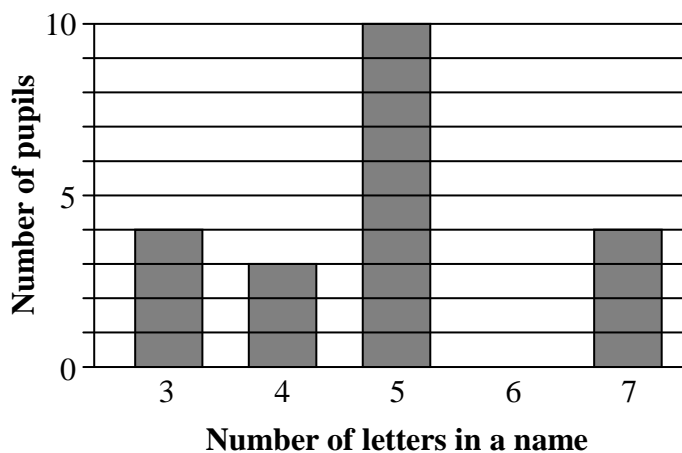
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20. The table and the bar graph show the number of letters in the name of each pupil in a Year 6 class.



a) Complete the missing parts in the **table** and the **bar graph**.

| Number of letters | Number of pupils |
|-------------------|------------------|
| 3                 | 4                |
| 4                 |                  |
| 5                 | 10               |
| 6                 | 9                |
| 7                 | 4                |



Fill in:

- b) i) The **total number** of pupils in class is \_\_\_\_\_.  
 ii) The name with \_\_\_\_\_ letters is the **most common**.
- c) What **fraction** of the pupils in this class has **only** 4 letters in their name?

\_\_\_\_\_

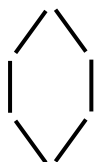
21. a) Write the following set of numbers in order, **smallest first**.

6.315      6.531      6.351      3.615

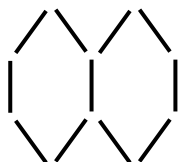
\_\_\_\_\_

b) Frans uses straight lines to draw the patterns below.

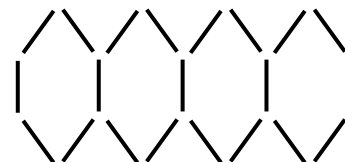
i) Draw **pattern 3**



**pattern 1**



**pattern 2**



**pattern 3**

**pattern 4**

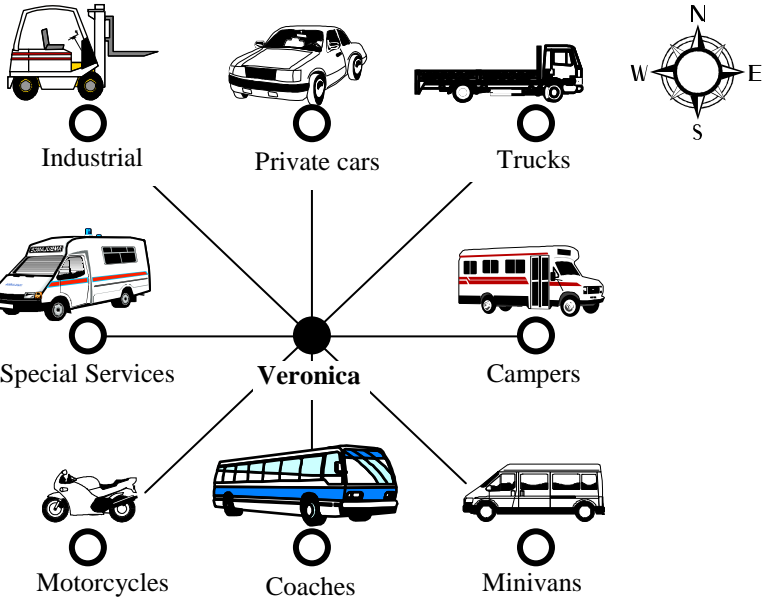
Complete.

ii) Every next pattern is **increasing** by \_\_\_\_\_ lines.

iii) **Pattern 8** will have \_\_\_\_\_ lines.

iv) Pattern number \_\_\_\_\_ will have **51 lines**.

22. Veronica is at the **centre** of the Transport Fair.



a) Fill in what Veronica sees when she faces

i) **southwest:**  
\_\_\_\_\_

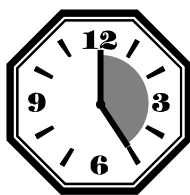
ii) **northeast:**  
\_\_\_\_\_.

b) Fill in the table.

| Veronica faces the | She turns through | She now faces the |
|--------------------|-------------------|-------------------|
| Coaches            | 90° clockwise     | Special Services  |
| Minivans           | 180°              |                   |
| Campers            | 90° anticlockwise |                   |
| Minivans           | 90° anticlockwise |                   |
| Campers            |                   | Special Services  |

23. a) This clock is showing 5 o'clock.

What is the **size** of the **shaded angle** formed between the hands of the clock?



\_\_\_\_\_ degrees

b) Stephanie is reading a book.

She spends 1 hour 45 minutes each day reading this book.

She takes 5 minutes to read one page.

After 9 days she has 17 more pages to read.

How many pages are there in the book?

24. a) Fill in with the correct **month**:

|   | <b>Month</b>   |
|---|----------------|
| e.g. Peter's birthday is in the <b>first</b> month.               | <i>January</i> |
| i) Mum's birthday is in the <b>fifth</b> month.                   |                |
| ii) Nancy's birthday is in the month with the <b>fewest</b> days. |                |
| iii) Trevor's birthday is in the month <b>before the last</b> .   |                |

b) Mum is planning to organize a birthday party for Dad in June 2009.  
She receives these notes from different members of the family.

we can only come  
on Saturdays  
or Sundays.  
  
grandpa  
& Grandma

*I will be  
abroad  
during the  
last  
weekend.*  
Albert

On the first  
Sunday of  
June we are  
invited to a  
wedding.  
Bill & Edna

*I am working  
on Saturdays  
and the third  
Sunday.*  
Aunt Martha

Mum says that they must **all** come to the party.

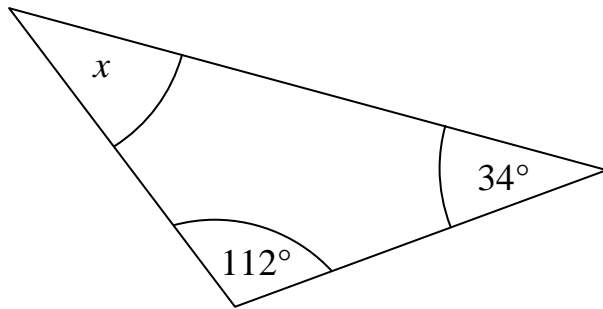
Use the calendar for the month of June to find when she can hold the party.

| <b>JUNE 2009</b> |     |      |     |       |     |     |
|------------------|-----|------|-----|-------|-----|-----|
| Sun              | Mon | Tues | Wed | Thurs | Fri | Sat |
|                  | 1   | 2    | 3   | 4     | 5   | 6   |
| 7                | 8   | 9    | 10  | 11    | 12  | 13  |
| 14               | 15  | 16   | 17  | 18    | 19  | 20  |
| 21               | 22  | 23   | 24  | 25    | 26  | 27  |
| 28               | 29  | 30   |     |       |     |     |

Mum can hold the party on \_\_\_\_\_ June.

25. a) i) Work out the value of the missing angle in this triangle.

(The diagram is not to scale.)



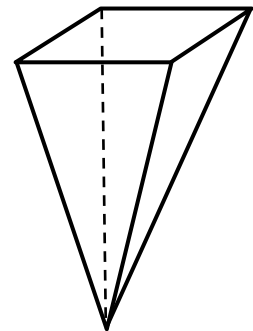
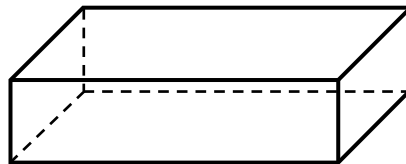
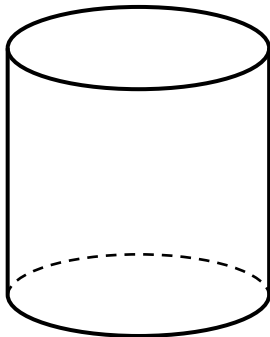
$x =$  \_\_\_\_\_

ii) Fill in.

This triangle is \_\_\_\_\_ (scalene, equilateral, isosceles)

because \_\_\_\_\_.

b) Match each shape to show its properties as in the example.



4 faces,  
5 vertices

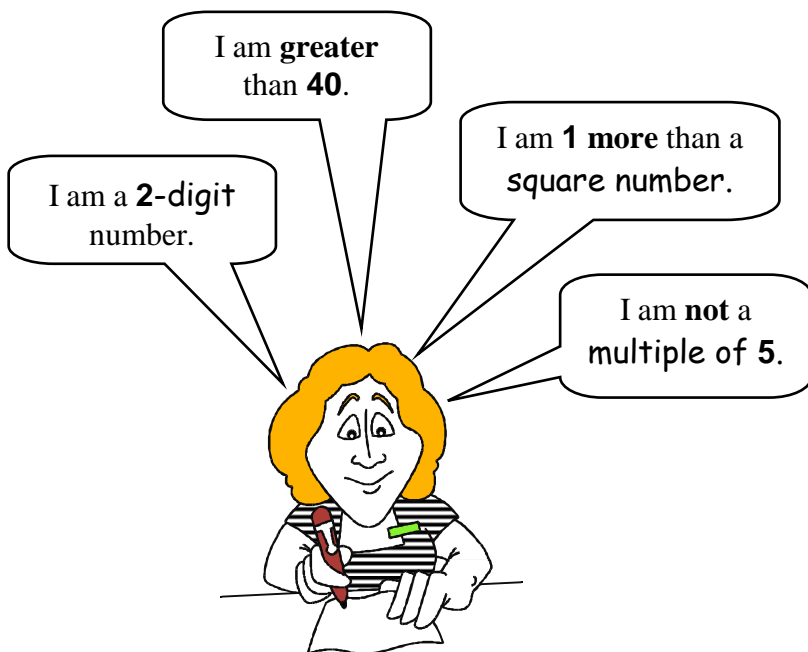
5 vertices,  
5 faces

2 edges,  
no vertices

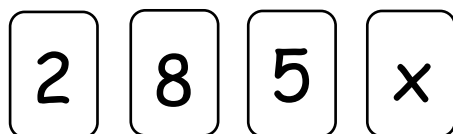
12 edges,  
8 vertices

12 faces,  
8 vertices

26. a) What number am I?



b) Arrange all the cards to give the largest possible answer.  
Each card can be used **only once**.



□ □ □ □

27. Karl buys **four** cheesecakes and **one** soft drink for €1.50.  
Analise buys **one** cheesecake and **one** soft drink for 87c.

Work out the cost of:

a) **three** cheesecakes

b) **one** cheesecake

\_\_\_\_\_ c

c) **one** soft drink.

\_\_\_\_\_ c

\_\_\_\_\_ c

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28.

**Explore**

When Patrick was born his mother bought a packet of 24 birthday candles.

On his first birthday she put **one** candle on the cake. When Patrick was two years old she put **two** candles and so on. Used candles were thrown away.

On one of Patrick's birthdays his sister Tania was born. Mother used one candle from the same packet for Tania's first birthday, two candles for the second birthday and so on.

How old were Patrick and Tania when **all** the candles were used up?

Patrick: \_\_\_\_\_ years old

Tania: \_\_\_\_\_ years old

**END OF PAPER**