Junior Lyceum Entrance Examination into Form One

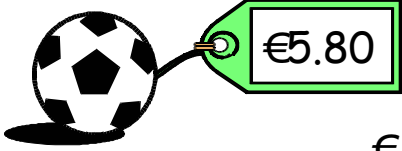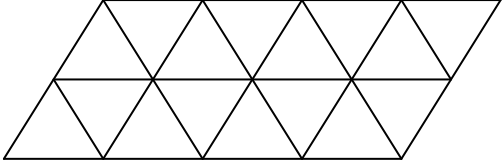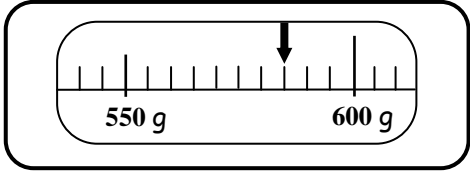# 2008

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.

1. $4999 + 641 =$

_____

2. Fill in:

☐ × ☐ = 35

3. What **change** do I get from €10?

€5.80

€_____

4. **Shade** $\frac{3}{8}$ of the shape.

5. Double $5 \cdot 7 =$

_____

6. 20% of €200 $=$

€ _____

7. $2 \cdot 5$ kg $=$

_____ g

8. Round $4 \cdot 73$ m to the **nearest tenth** of a metre.

_____ m

9. **Tick** ✓ the **correct answer**:

$7 \cdot 59$ lies between:

a) $6 \cdot 5$ and $7 \cdot 5$ ☐

b) $7 \cdot 5$ and $8 \cdot 5$ ☐

c) $7 \cdot 6$ and $7 \cdot 7$ ☐

d) $8 \cdot 5$ and $9 \cdot 5$ ☐

10. Look at this scale:

550 g   600 g

The arrow is pointing to _____ g

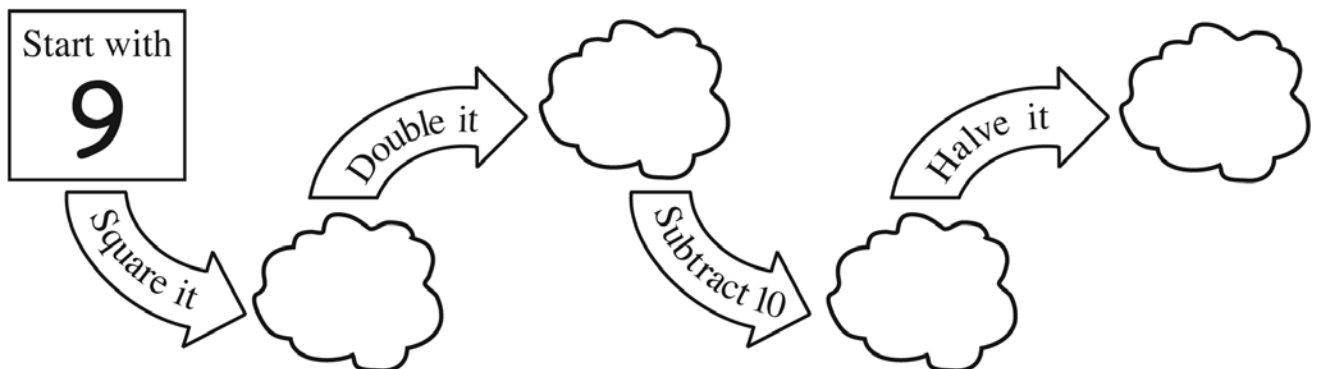11. a) Work out the **total** weight, in kg, of these three sacks.

14·25 kg

6·8 kg

13·99 kg
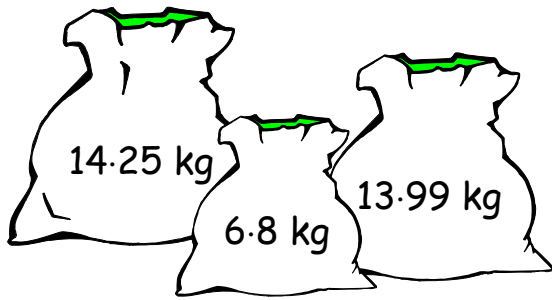
_____ **kg**

b) Change your answer to **grams**.

_____ **g**

12. Fill in:

Start with

9

Square it

Double it

Subtract 10

Halve it

13. Kim bought 7 bottles of water.

She received 13c **change** from €3.00.

How much did **each bottle** cost?

_____ **c**

14. a) Write each fraction in its **simplest form**.

i) $\dfrac{56}{63}$

ii) $\dfrac{60}{84}$

b) Change $\dfrac{29}{8}$ to a **mixed number**.

c) Write a fraction that is **greater than** $\dfrac{4}{9}$ but **less than** $\dfrac{5}{9}$.

_____

15. a) There are 22 metal rods.

Each rod weighs 21·8 kg.

Give an **estimate** for the **total weight** of these metal rods.

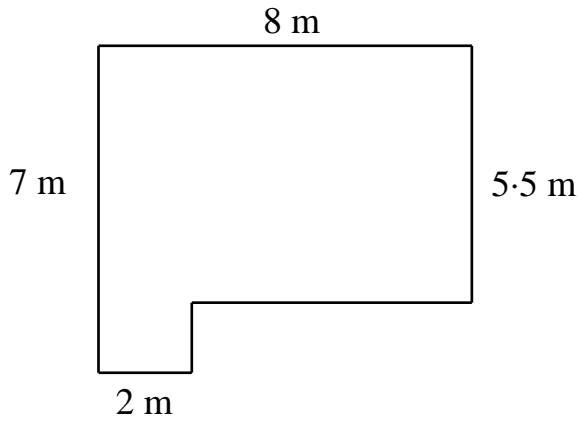_____ **kg**

b) Each metal rod is 2·7 m long.

Five rods are placed end to end in a line.

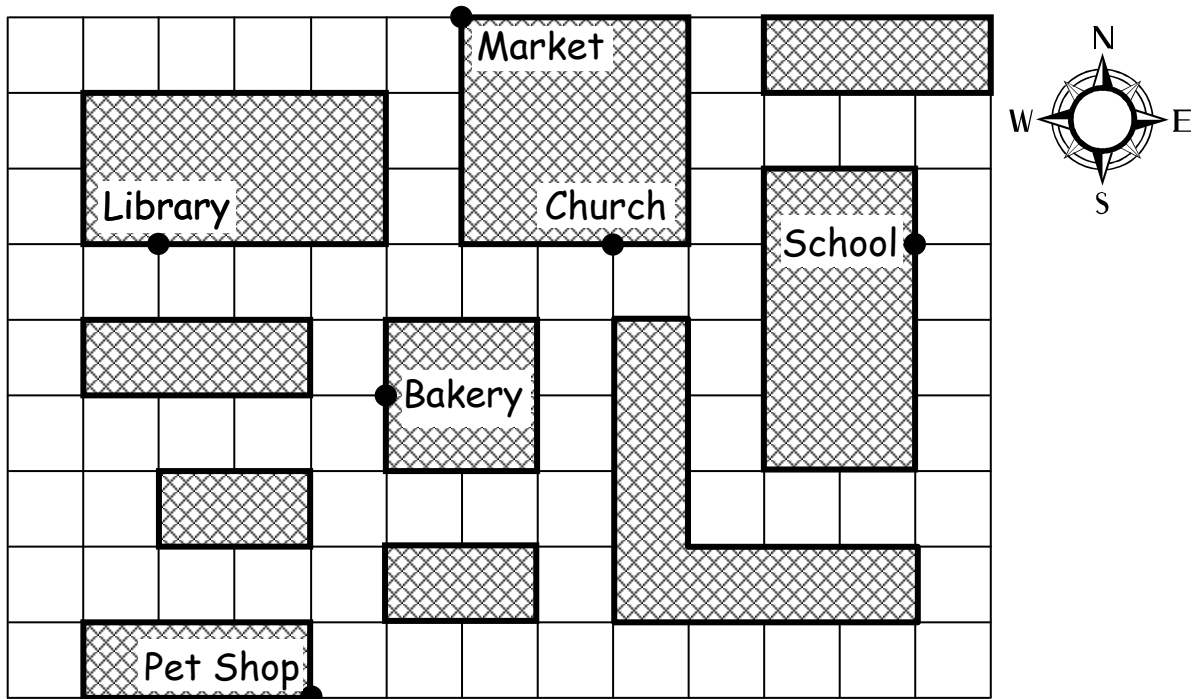How long is the line of metal rods?

←— 2·7 m —→

_____ **m**

16. Work out the **area** of this shape.

8 m

7 m

5·5 m

2 m

_____ **m**^{2}

---

17. This is the plan of a town. The shaded blocks represent buildings in the town.

Each side of a square represents 5 m.

Market

Library

Church

School

Bakery

N

W   E

S

Pet Shop

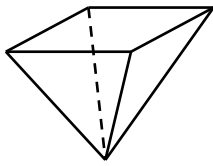Kathy is at the Market and she wants to go to the Library.

She walks **15 m south** and **20 m west**.
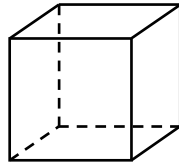
a) Paul is at the Bakery.

He walks **10 m north** and **15 m east** and arrives at the _____.

b) Vanessa is at **School**. Use **distance** and **compass directions** to describe the
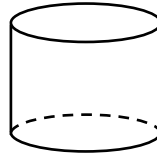**shortest trip** Vanessa can take to go to the **Pet Shop**.

_____

_____

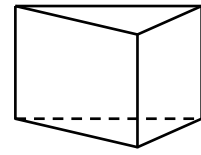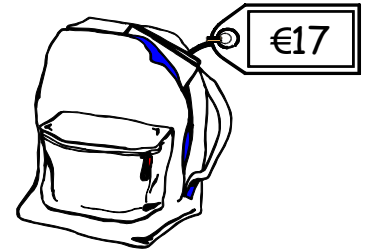18. These are four different solids.

   | A | B | C | D |

   Fill in:

   a) Solid _____ has **no vertices**.

   b) The solids _____ and _____ have an **equal number of faces**.

   c) Solid _____ has **half the number of faces as edges**.

   d) Solid _____ has an **odd number of edges**.

19. A school bag costs €17.

   Work out the **largest** number of school bags that can be bought for €273.

_____ **school bags**

20. Mother gives €36 to **each** of her 3 sons, Alex, Brad and Cedric.

Alex spends €15.

Brad spends one sixth of his money.

Cedric spends 25% of his money.

a) Who spends the **least** amount of money?

_____

b) The three brothers put the money they have left on the table.

They decide to **share equally** the amount they have **left**.

How much does **each** have now?

€ _____

21. Fill in:
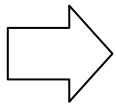   a) i) There are _____ **days** in **June**.

   ii) There are _____ **hours** in **2 days**.

   b) Wendy takes **2 minutes** to read a page from her storybook.
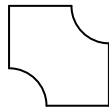
   She starts reading at 14:25 and reads **50 pages**.
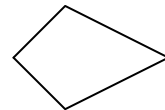   At what time does Wendy **stop** reading?

_____

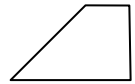22. a) Look at these shapes.

A   B   C   D
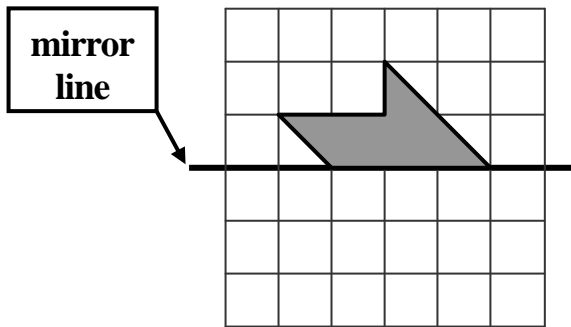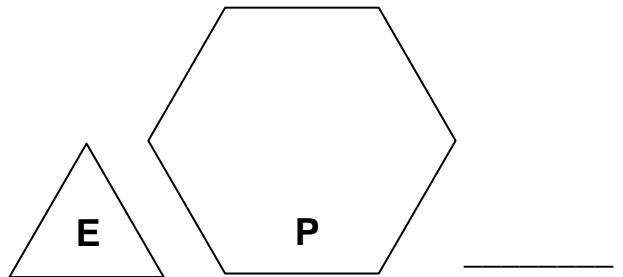
Fill in:

   i) Shape _____ has **no lines** of symmetry.

   ii) Shape _____ has **more than one** line of symmetry.

   b) Draw the **reflection** of the shaded shape in the mirror line.

mirror line

   c) How many times will shape **E** fit into shape **P**?

E   P   _____
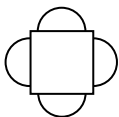
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23. a) Write these numbers in **order** from the **largest to the smallest**.

$\dfrac{2}{5}$ 50%   0·45   ➡

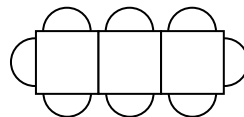   b) The patterns below show how tables and chairs can be arranged in a restaurant.

   i) Draw **pattern 2**.
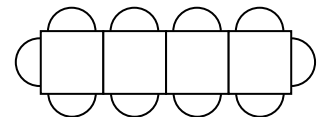
   pattern 1   **pattern 2**   **pattern 3**   **pattern 4**
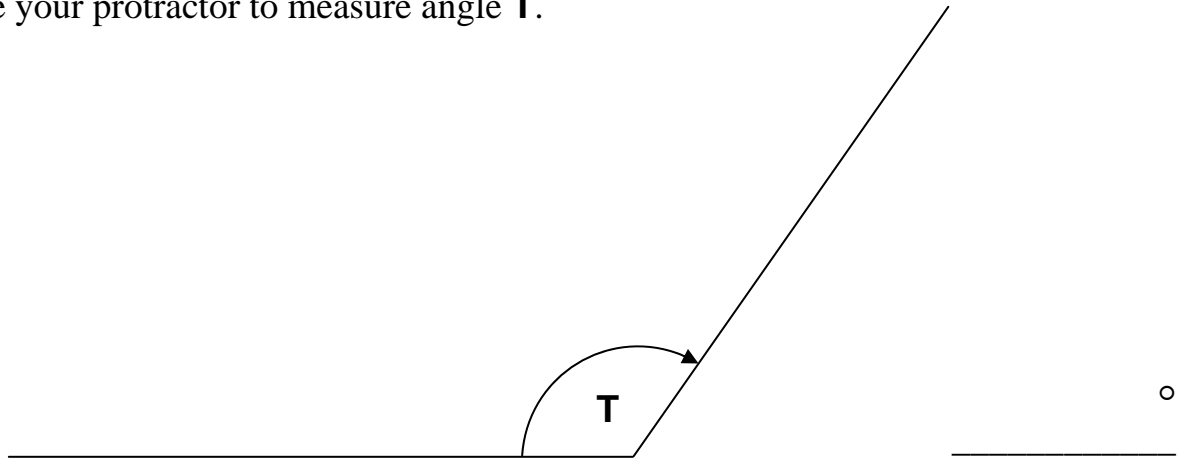
   ii) Complete:

Number of tables	1	2	3	4
Number of chairs	4		8	

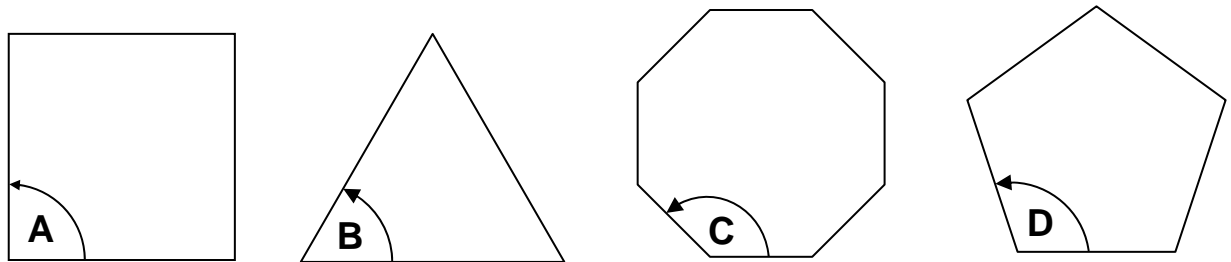   iii) **Pattern 10** will have _____ chairs.

   iv) **Pattern** _____ will have **42 chairs**.

24. a) Use your protractor to measure angle **T**.

_____ °

b) Look at the marked angles in these shapes.

A   B   C   D

Arrange the angles marked A, B, C and D **in order of size**, **smallest first.**

_____   _____   _____   _____

c) Look at this shape.

X
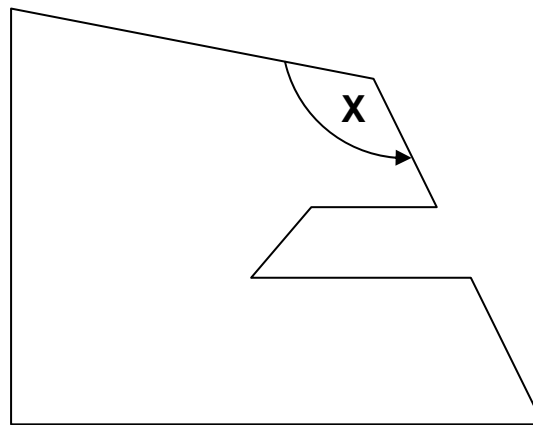
i) Angle **X** is _____ (an acute, a right, an obtuse) angle.

ii) Mark the **right angle** on the shape. Name the right angle, **R**.

iii) Use your ruler to measure the length of the **vertical line**.   _____ **cm**

iv) There are _____ **horizontal lines** in the shape.

25. The **table** and **pictograph** show the number of pizzas sold by a restaurant during a week.

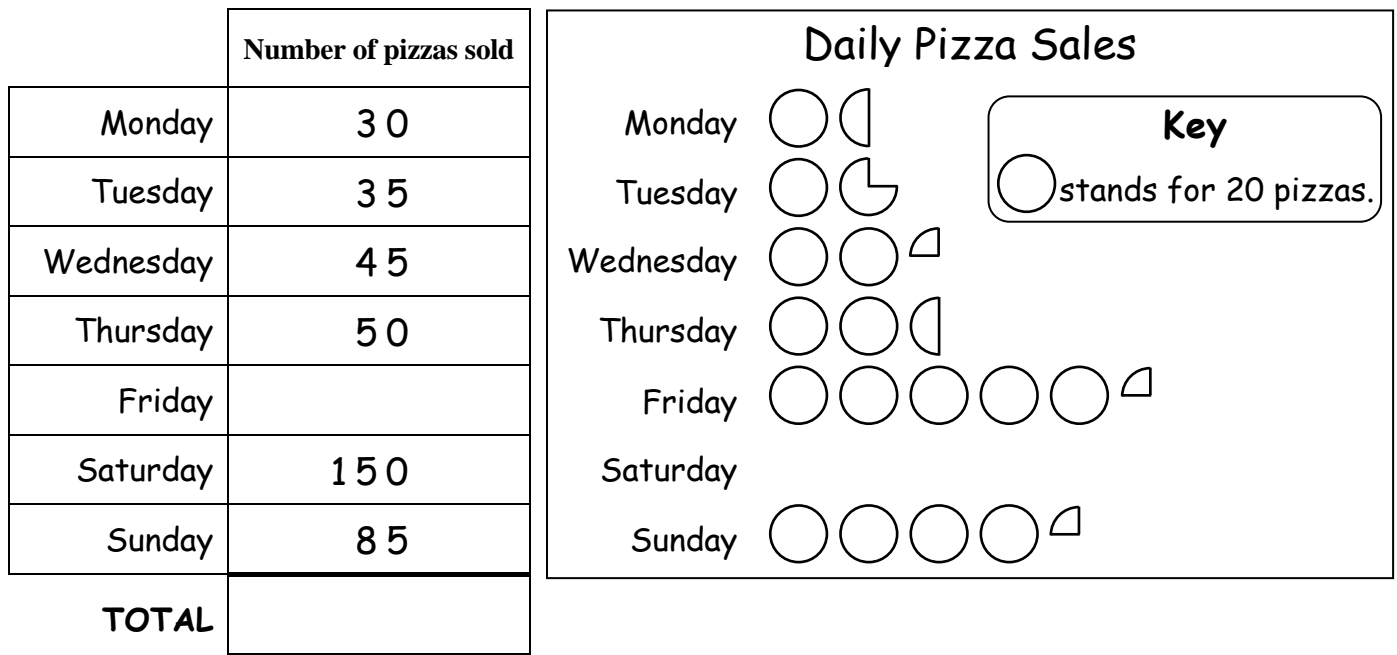|	Number of pizzas sold
Monday	3 0
Tuesday	3 5
Wednesday	4 5
Thursday	5 0
Friday	
Saturday	1 5 0
Sunday	8 5
TOTAL	

Daily Pizza Sales

Monday	○◖
Tuesday	○◔
Wednesday	○○◹
Thursday	○○◖
Friday	○○○○○◹
Saturday	
Sunday	○○○○◹

Key

○ stands for 20 pizzas.

a) Complete the **table** above.

b) Complete the **pictograph** to show the number of pizzas sold on **Saturday**.

c) On which day was the **least** number of pizzas sold? _____.

d) What **proportion** of the **total** number of pizzas was sold on **Thursday**?

_____

26. Vincent uses matches to make a number of triangles and squares like these:
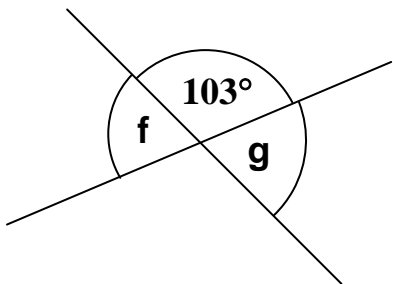
He uses 72 matches to make 3 **more triangles than squares**.

How many triangles and how many squares does he make?

_____ triangles

_____ squares

27. a) i) **Work out** the value of the angles **f** and **g**.

f = _____ °

g = _____ °

ii) What do you notice about the angles **f** and **g**?

_____

b) The picture shows a table top. This has the shape of a **rectangle**.
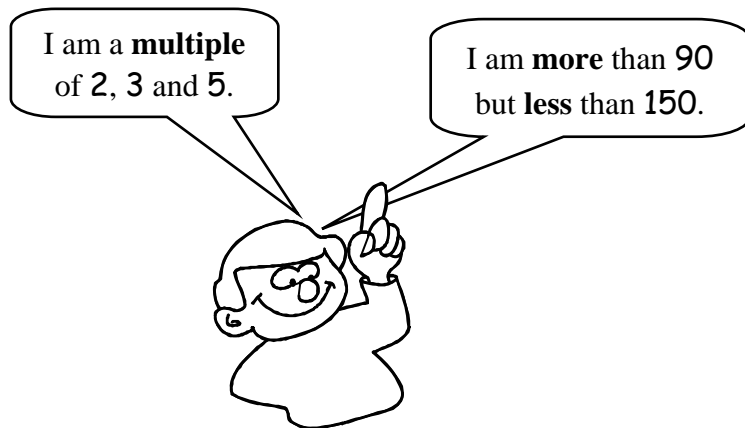You have to mark, with a dot, the **exact centre** of the table top.
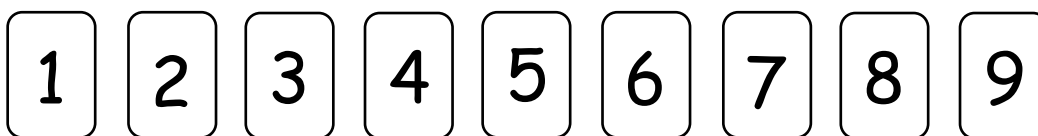**You are not allowed to measure**.
Find, by drawing, the **exact centre** of the table top.

28. a) What number am I?

I am a **multiple** of 2, 3 and 5.

I am **more** than 90 but **less** than 150.

_____

b) Arrange all the cards in **groups of three** so that each group gives a **total of 15**.

Each card can be used **only once**.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

☐ + ☐ + ☐ = 15

☐ + ☐ + ☐ = 15

☐ + ☐ + ☐ = 15

END OF PAPER