A

FORM 1	MATHEMATICS SCHEME A	TIME: 30 minutes
	Non-Calculator Paper	

Name: _____   **Class:** _____

Question	1	2	3	4	5	6	7	8	Total
Mark									

Instructions to Candidates

- **Answer all questions.**

- **This paper carries a total of 25 marks.**

- **Calculators and protractors are not allowed.**

1. (a) Write in **figures**: one hundred and five thousand, two hundred and thirty

_____

   (b) Write in **words**: 2 364 211

   _____

   _____

   (c) Work out: 38 000 × 200

_____

(3 marks)

2. I have 16 boxes. Each box contains 21 packets.
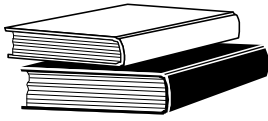   How many packets do I have **in all**?

_____

(2 marks)

3. I spent €210 to hire a car for 14 days.
   What was the cost for **one day**?

_____

(2 marks)

4. Work out in its simplest form: $\left(\dfrac{2}{5} - \dfrac{4}{15} \right) \times \dfrac{5}{8}$

_____

(4 marks)

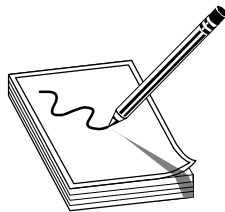5. (a) Janet buys the items below. What is the **total** cost of these items?

€4

€1240 **each**

15 cent

€5·05

€0·78

Item	Price per item	Total
Books		
Scissors		
Notepad		
Rubber		
Stapler		
Total Cost		

(b) How much **change** would she get from €40?
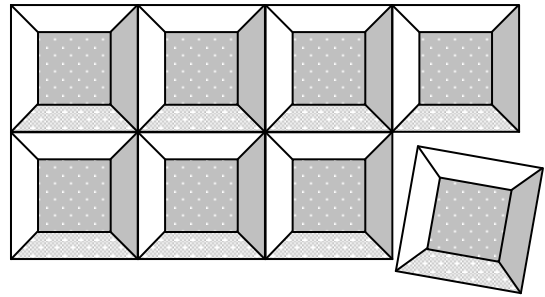
_____

_____ (*4 marks*)

6. (a) Write the next three **even** numbers: 16, _____, _____, _____.

(b) Write the next three **multiples of six**: 36, _____, _____, _____.

(c) Write 220 as the product of **prime factors**.

_____

_____ (*4 marks*)

7.	A bar of chocolate has 8 squares.

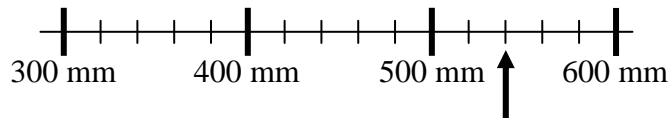	The area of its surface is 72 cm^2.

	(a)	What is the area of **one square**?

	_____

	(b)	How long is **one side** of a square?

	_____

	(3 marks)

8.	(a)	The arrow is pointing to the amount of rain that fell in 2008.

	300 mm 400 mm 500 mm 600 mm

	How much did it rain in 2008?

	_____

	(b)	Write without brackets:

	$7(4a - 3)$

	_____

	(c)	Change $\dfrac{3}{20}$ to a decimal.

	_____

	(3 marks)

END OF PAPER

SECONDARY SCHOOL ANNUAL EXAMINATIONS 2009
Directorate for Quality and Standards in Education
Educational Assessment Unit

A

FORM 1	MATHEMATICS SCHEME A	TIME: 1h 30min

Main Paper

Name: _____   **Class:** _____

- **Answer all questions.**
- **This paper carries 75 marks.**
- **Calculators and mathematical instruments are allowed but all necessary working must be shown.**
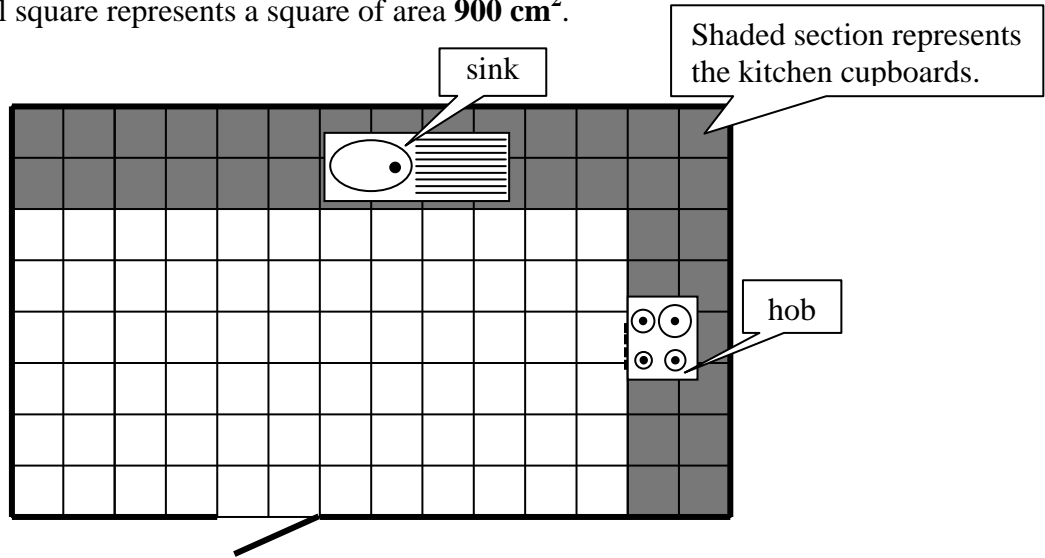
1. Daniel receives **€11.50** pocket money a week.

    He uses **28%** of it on travelling expenses.

    (a) How much does he spend on travelling **per week**?

    _____

    (b) How much does he spend on travelling **per year**?

    _____

    (4 marks)

2.   This **scale drawing** shows the plan of a kitchen.
     Each small square represents a square of area **900 cm²**.

sink

Shaded section represents the kitchen cupboards.

hob

(a) What is the **area** of the whole kitchen?

     _____

(b) What area of the floor is taken up by the kitchen cupboards?

     _____

(c) Write down the ratio
              area of whole kitchen : area of kitchen cupboards

     _____

(d) **Simplify** the ratio in part (c).

     _____

                                                                    (*6 marks*)

3.   (a) Put these numbers in order of size, starting with the smallest:
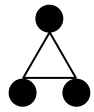   **2, – 12, – 8, 5, – 5**

          _____

     (b) Work out: **(– 12) ÷ (– 4)**

          _____

     (c) Work out: **(– 3) + (+ 2)**

          _____

                                                                    (*3 marks*)

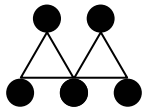4.   Ruth is making **patterns** using black discs and white triangles.
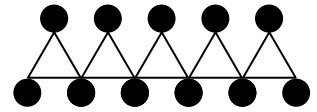

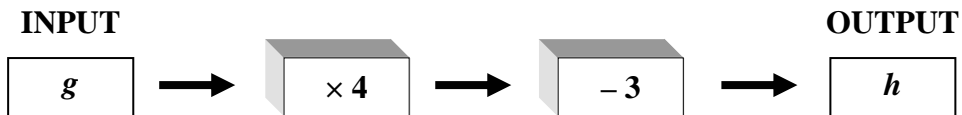pattern 1   pattern 2   pattern 3   pattern 4   pattern 5

(a) **Draw** patterns 3 and 4.

(b) **Complete** Ruth's table for the first six
    patterns.

(c) What is the total number of shapes needed
    for the **10th pattern**?

Pattern	Black discs	White triangles	Total number of shapes
1	3	1	4
2	5	2	
3			
4			
5	11		16
6			

_____

                                                                      (*5 marks*)

5.   Here is a **number machine**.

INPUT   **OUTPUT**

g → $\times 4$ → -3 → h

(a) What is the output h when the input g is 5?

_____

(b) What is the input g when the output h is 5?

_____

(c) The number machine above can be written as the equation: $4g - 3 = h$
    Write the equation for the following number machine:

INPUT   OUTPUT

x → $+6$ → $\times 2$ → y

_____
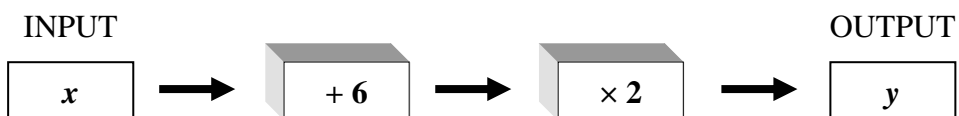
                                                                      (*3 marks*)

6. (a) **Simplify** (tidy up)

$$4x + 2y - 2 - 3x - 1 + y$$

_____

   (b) A greengrocer is selling **apples** at **45 cent** each and **bananas** at **60 cent** each.
   Pamela uses the formula $P = 45a + 60b$ to work out the total price.

   (i) What do P, a and b stand for? P _____

   a _____

   b _____

   (ii) Use the formula to find the **total** cost of 5 apples and 6 bananas.
   Give your answer correct to the **nearest €**.

_____
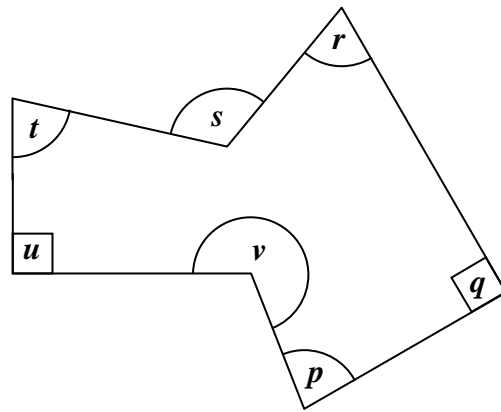
(5 marks)

7. Which angles are

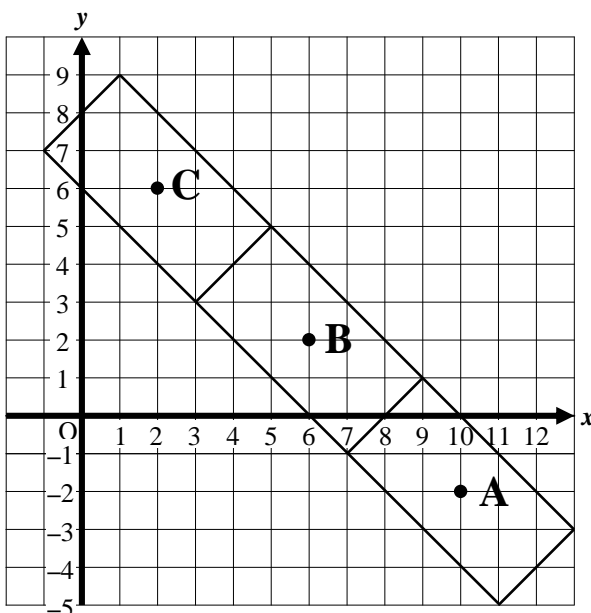   acute?   _____

   obtuse?   _____

   right-angled? _____

   reflex?   _____

(4 marks)

8.

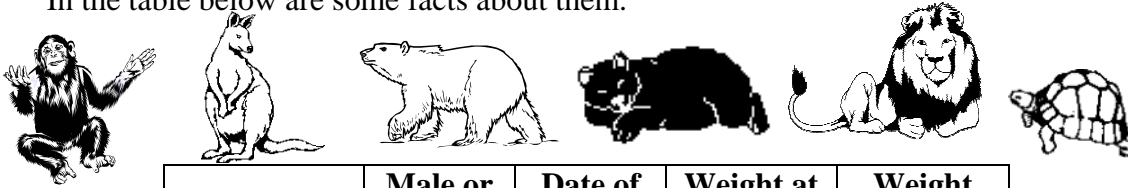   (a) Write the **co-ordinates** of the **centres** of the rectangles.

   A = (,)

   B = (6 , 2)

   C = (,)

   (b) Write the equation of the line that has all the three centres on it.

_____

(3 marks)

9. These animals were all born in a zoo.
   In the table below are some facts about them.

	Male or Female	Date of Birth	Weight at birth	Weight now
Polar bear	female	30.11.00	400 g	320.5 kg
Black bear	female	06.05.93	325 g	120.11 kg
Chimpanzee	male	12.03.95	2 kg	72 kg
Kangaroo	female	09.01.97	12 g	45 kg
Lion	male	21.06.94	1.5 kg	178 kg
Tortoise	male	27.02.57	30 g	3.729 kg

(a) Which animal weighed **least** at **birth**?   _____

(b) Which animal weighs **most now**?   _____

(c) Write, correct to the **nearest** kg,
    the weight of the polar bear now.   _____

(d) How old is the **oldest** animal (in years)?   _____

── (*4 marks*)

10. What is the value of the angles marked *a*, *b* and *c*? Give reasons for your answers.
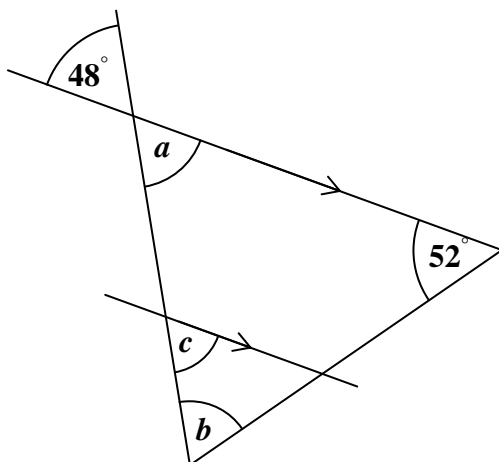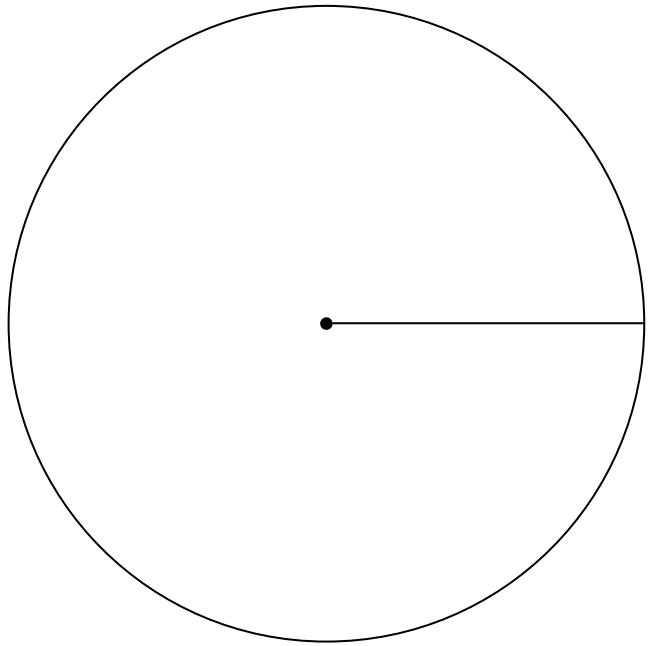

a _____ (_____)

b _____ (_____)

c _____ (_____)

── (*4 marks*)

11. Jasmine collects some data about a cereal.

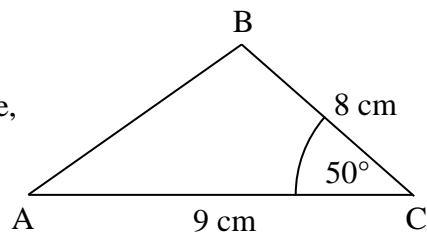| Nutritional content	Amount per portion	Angle
Proteins	6 g	
Carbohydrates	18 g	
Fibre	24 g	
Fats	12 g	
Total	60 g	360°

Draw and label a pie chart using the information in the table.

(*4 marks*)

12.   This is a **sketch** of triangle ABC.

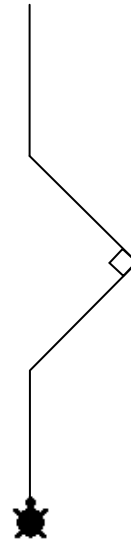(a) Construct an **accurate** drawing of this triangle, using the measurements shown.

B

8 cm

50°

A   9 cm   C

(b) Measure and write down the length of side **AB**.   _____

(*5 marks*)

13. Fill in the **two** missing LOGO commands which draw this sketch:

   PD FD 50 RT 45 FD 50 [_____] **FD 50** [_____] **FD 50**

_____ (*2 marks*)

14. The probability that I see

   a red car is $\dfrac{1}{3}$,   a blue car is $\dfrac{1}{2}$,   a green car is $\dfrac{1}{10}$ and a purple car is 0.
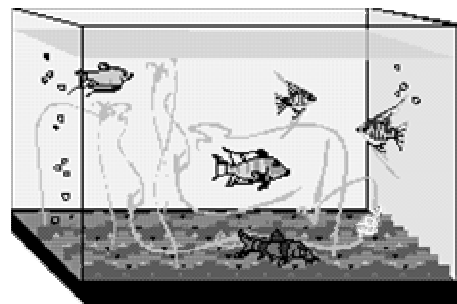
   (a) Which car colour would I probably see **most**?

   _____

   (b) How many **purple** cars would I see?

   _____

_____ (*3 marks*)

15. An aquarium has the shape of a cuboid.
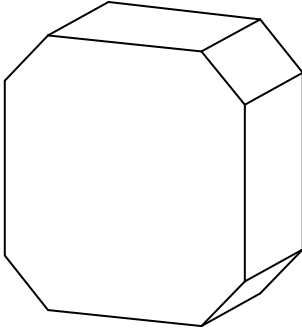   It is 0.98 m long, 40 cm wide and 421 mm high.

   (a) What is its **volume** in cm^3?

   _____

   (b) 1000 cm^3 = 1 litre
       What is the maximum amount of water it can hold?
       Give your answer correct to the nearest litre.

   _____

_____ (*6 marks*)

16. This is an octagonal prism.

(a) How many **faces** does it have?

_____

(b) How many **vertices** does it have?

_____

(c) How many **edges** does it have?

_____

(3 marks)

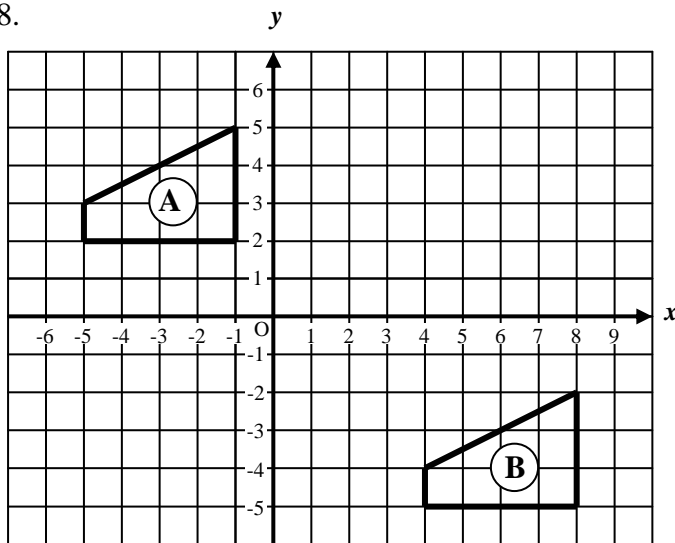17. Five children are **3 years, 6 years, 4 years, 8 years and 4 years** old.

(a) What are the **mean**, **mode** and
range of their ages today?   _____ _____ _____

(b) What would be the mean,
mode and range of their ages
in **four years' time**?   _____ _____ _____

(c) Compare the answers in part (a) and in part (b).
Explain briefly why one answer remained the same.

(7 marks)

18.

(a) Describe the transformation which
takes shape **A** to shape **B**.

_____

_____

(b) **Reflect** shape **A** in the *y* axis
and label the image **C**.

(c) **Translate** shape **B**
1 to the right and 7 up.
Label the image **D**.

(4 marks)

END OF PAPER