SECONDARY SCHOOL ANNUAL EXAMINATIONS 2009

Directorate for Quality and Standards in Education
Educational Assessment Unit

1

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**?

_____

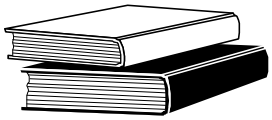
(*2 marks*)

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

_____

(*4 marks*)

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

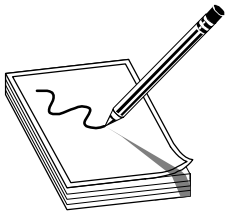


€12·40 **each**

€4

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, _____, _____, _____.

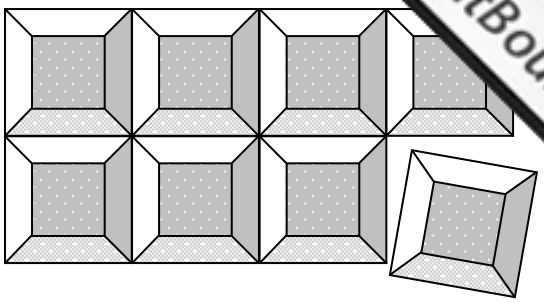
(b) Write the next three **multiples of six**: 36, _____, _____, _____.

(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**?

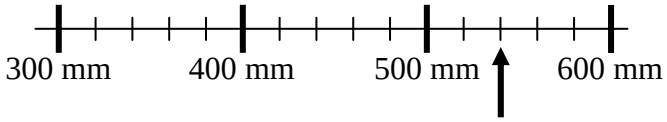
_____

(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.



How much did it rain in 2008?

_____

(b) Write without brackets:

$7(4a-3)$

_____

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

_____

(*3 marks*)

END OF PAPER

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1

FORM 1 **MATHEMATICS SCHEME A** **TIME: 1h 30min**

Main Paper

Question	1	2	3	4	5	6	7	8	9			
Mark												
Question	10	11	12	13	14	15	16	17	18	Total Main	Non Calculator	**Global Mark**
Mark												

DO NOT WRITE ABOVE THIS LINE

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**?

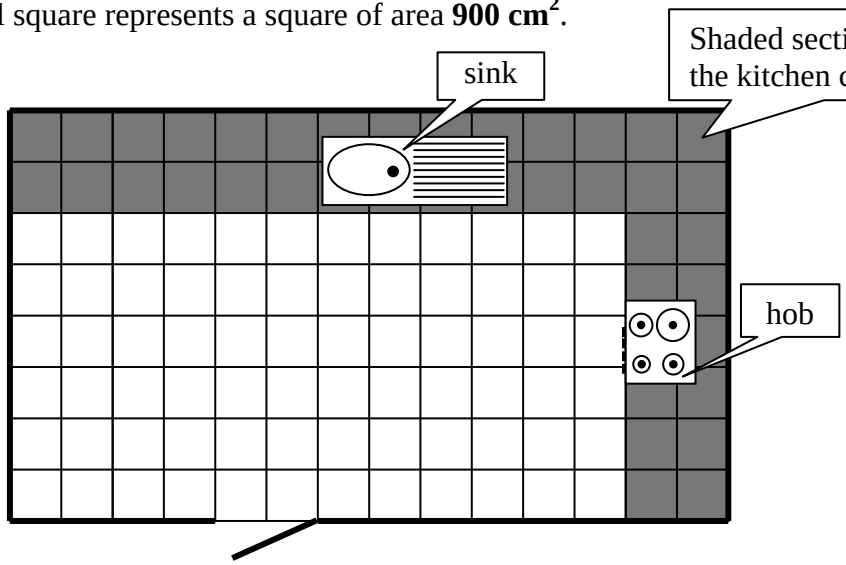
   _____

   (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 cm^2**.



(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)**

_____

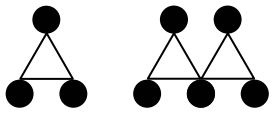
(c) Work out: **(– 3) + (+ 2)**

_____

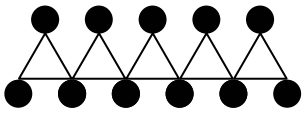
(*3 marks*)

Name: _____ **Class:** _____

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**.

(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:

_____

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*)

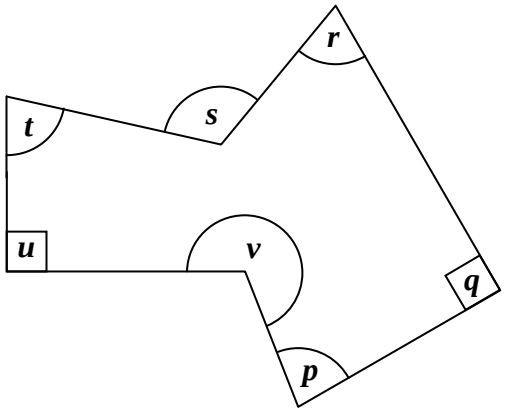
7. Which angles are

acute? _____

obtuse? _____

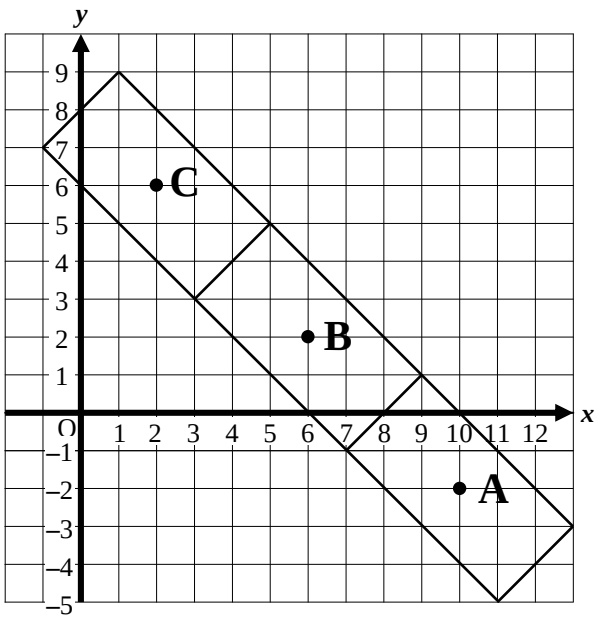
right-angled? _____

reflex? _____



(*4 marks*)

8.



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

A = (,)

B = (6 , 2)

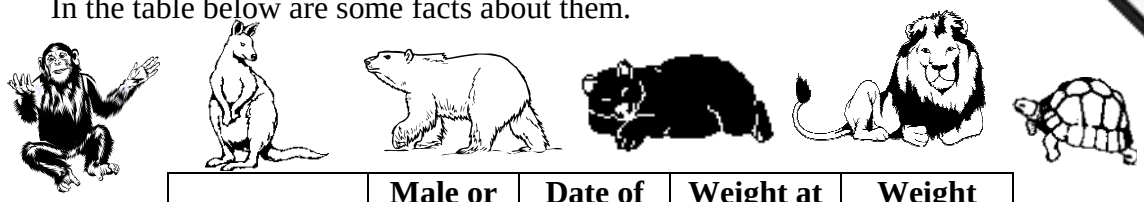
C = (,)

(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**? _____

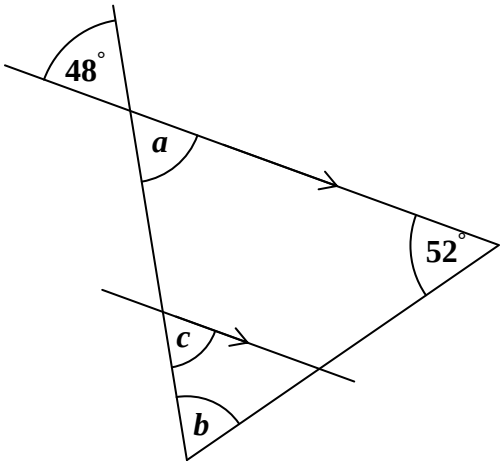
(b) Which animal weighs **most now**? _____

(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 _____ (_____)

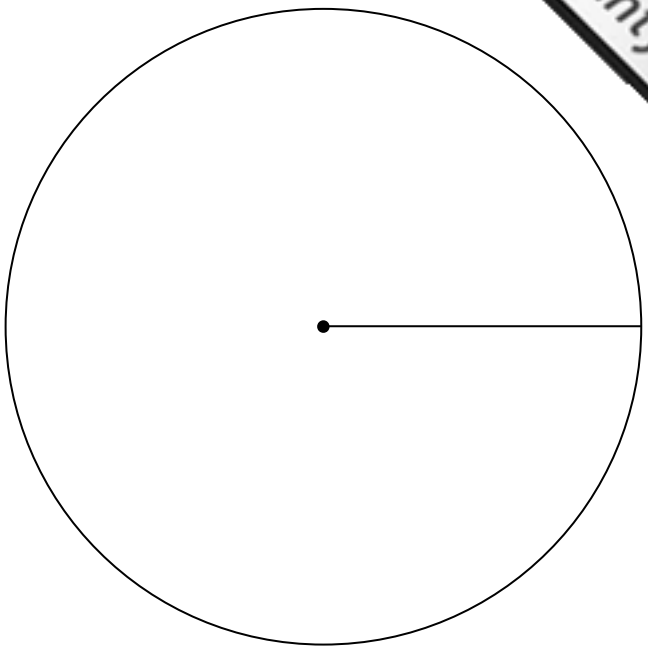
c _____ (_____)

(*4 marks*)

11. Jasmine collects some data about a cereal.

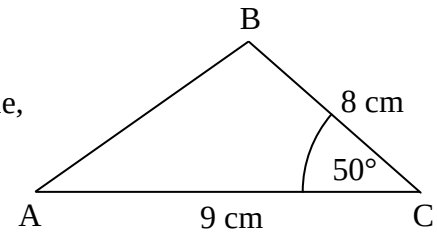
Nutritional content	Amount per portion	Angle
Proteins	6 g	
Carbohydrates	18 g	
Fibre	24 g	
Fats	12 g	
Total	60 g	360°

Draw and label a pie chart
information in the table.



(*4 marks*)

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



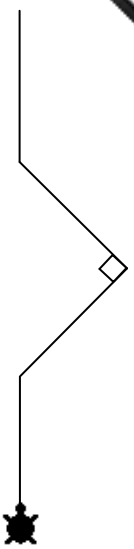
(a) Construct an **accurate** drawing of this triangle, using the measurements shown.

(b) 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 $\frac{1}{3}$, a blue car is $\frac{1}{2}$, a green car is $\frac{1}{10}$ and a purple car is 0.

(a) Which car colour would I probably see **most**?

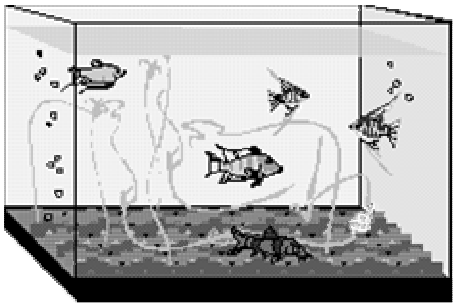
_____

(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?

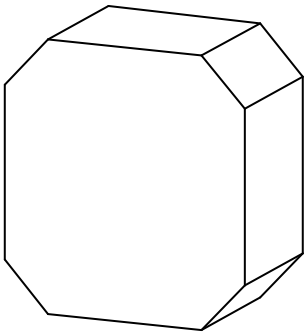
_____

(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.

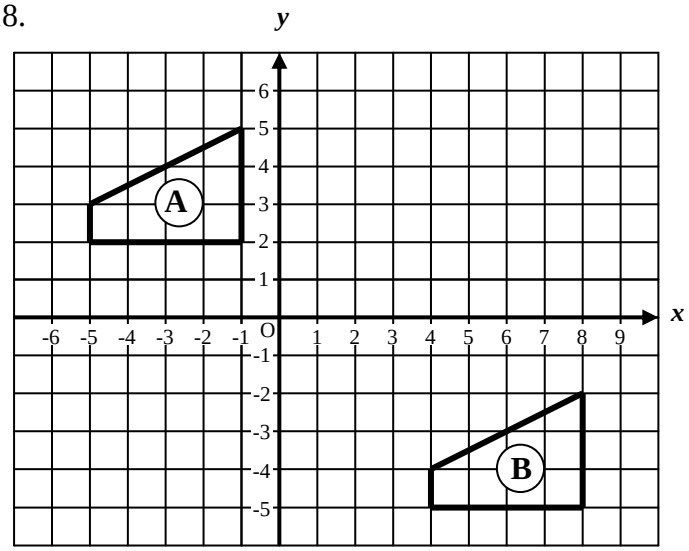
(a) What are the **mean**, **mode** and **range** of their ages today? _____ _____ _____

(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