DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION

Department for Curriculum Management and eLearning

Educational Assessment Unit

Annual Examinations for Secondary Schools 2013

FORM 5   **MATHEMATICS SCHEME C**   **TIME: 20 minutes**
Non Calculator Paper

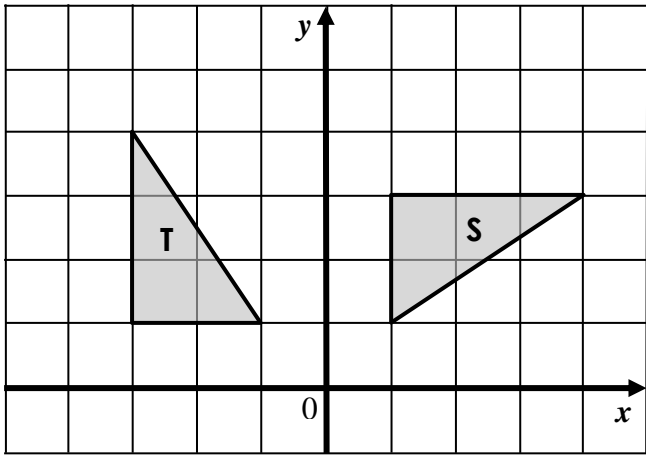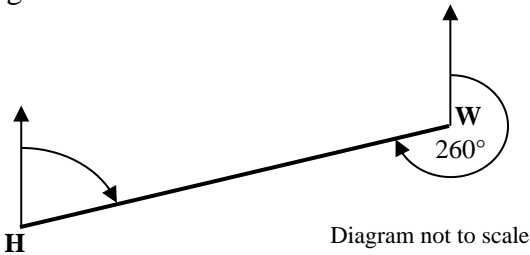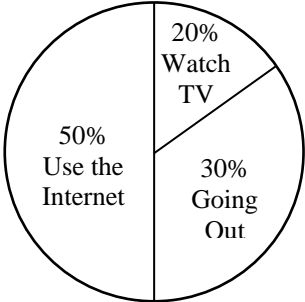**Name: _____**   **Class: _____**

Mark

Instructions to Candidates

- **Answer ALL questions.**

- **This paper carries a total of 20 marks. Each question carries 1 mark.**

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

No.	Question	Space for
1	Underline the **one** that is equal to: 36 A. $15 \times 2 + 3$ B. $(12 + 6) \times 2$ C. $10 + 2 \times 3$	
2	Monica is packing 23 cakes into boxes. Each box holds 4 cakes. What is the **smallest** number of boxes that Monica needs to pack **all** the cakes? _____ boxes	
3	**Solve**: $3x - 7 = 17$ $x =$ _____	
4	Paul has 46 marbles and Alan has 54 marbles. How many marbles should Alan give to Paul so that they both have the **same** number of marbles? _____ marbles	
5	**Twelve** children share **3** pizzas between them. Underline the fraction of pizza that each child will get. A. ½ B. ⅛ C. ¼ D. ⅜	
6	**Estimate** the area of the shape in unit squares. ☐ _____ unit squares	
7	**Three** copybooks cost the **same** as **1** file. **Two files** and **one copybook** cost the same as _____ copybooks.	

No.	Question	Space for
8	Underline the shape that has **no** parallel lines. A. Trapezium B. Rhombus C. Kite	
9	Joanne started a fun run at 10:15 am. She finished at 11:05 am on the same day. How many minutes did it take Joanne to finish the fun run? _____ minutes	

10	Underline the correct transformation of triangle T to S.
	
	  A. Reflection in the *y*-axis.
	  B. Rotation of 90° clockwise about the origin.
	  C. Enlargement by scale factor 2 about the origin.	

11	The bearing of H **from W** is 260°. Underline the correct bearing of W **from H**: A. 080° B. 100° C. 130°	
12	Mark has 5 dogs and a 15 kg bag of dog food. Each dog eats **100 g** of dog food each day. The bag of dog food will last for _____ days.	

No.	Question	Space for
13	Use A = πr² to **estimate** the **area** of a circle with a radius of 4 m. _____ m²	
14	The following are the **ages** (in years) of five athletes. 15, 22, 18, 26, 20 What is their **median** age? _____	
15	Underline the size of the **exterior** angle of a regular polygon with **12** sides. A. 15° B. 30° C. 45° D. 60°	
16	A **rectangle** measures 4.5 cm by 8 cm. A **square** has the **same area** as the rectangle. Work out the **length** of a side of the square. _____ cm	
17	**Work out** giving your answer in its **lowest terms**: $$\frac{2}{9} + \frac{1}{9}$$ _____	
18	60 students voted on how they spend their free time. The percentages in the pie chart show how the students voted. How many **students** prefer watching TV? _____	
19	Work out the value of **3(h + m)** when **h** = 9 and **m** = 11. _____	
20	Owen bought 4 kg of bananas at €1.75 per kg. How much did he have to pay? €_____	

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FORM 5	**MATHEMATICS SCHEME C**		**TIME: 1h 40min**
	Main Paper		

Question	1	2	3	4	5	6	7	8	9	10	11	12	Main	Non Calculator	Total
Mark															

Name: _____   **Class: _____**

Instructions to Candidates

- **Answer ALL questions.**

- **This paper carries a total of 80 marks.**

- **Calculators are allowed. Show all necessary working.**

1. Using your **calculator**, work out:

    a) $30 - 7 \times 2.6$ = _____

    b) $35 + \sqrt{225}$ =_____

    c) $100 - 4^3$ = _____

    d) $\frac{1}{2}(3.2 + 7)$ =_____

    (4 marks)

2. **Match** the given expressions to their answers. The first one is done for you.

$3(x - 7)$	$2x - 5 + 3x - 4$	$4 + 2(x - 5)$	$4(x - 1) + 2(x + 3)$

$5x - 9$	$6x + 2$	$3x - 21$	$2x - 6$

    (3 marks)

3. The following are the **sea temperatures** in degree Celsius (°C) during each m_____0.

16, 16, 16, 17, 20, 23, 26, 27, 26, 24, 22,

Work out:

a) The **modal** sea temperature.

_____ °C

b) The **range** in sea temperatures.

_____ °C

c) The **mean** sea temperature for 2010.

_____ °C

(4 marks)

4. a) John **bought** a calculator for €8. He then **sold** it to his friend Anna for €10. Work out:

i) The **profit** John made in selling the calculator.

€_____

ii) His profit as a **percentage** of the original cost.

_____ %

b) Paul buys a computer costing **€640**. Paul pays 25% deposit.

i) Write 25% as a **fraction**.

€640

_____

ii) Work out the **deposit** that Paul pays.

€_____

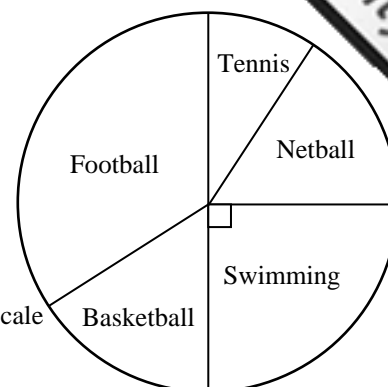iii) Work out the **remaining** amount of money that Paul has to pay.

€_____

Name: _____   Class: _____

5. The pie chart shows the favourite **sport** of a group of 15 year old students.

The table below shows information about each **sector** (part) of the pie chart.

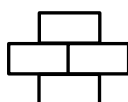**Complete** the table filling in the missing information.

Tennis

Netball

Football

Swimming

Diagram not to scale   Basketball

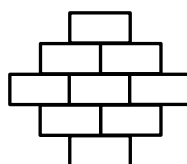| SPORT	ANGLE IN PIE CHART	NUMBER OF STUDENTS
TENNIS	30°	
NETBALL	60°	30
SWIMMING		
BASKETBALL	60°	
FOOTBALL		60
	360°	**180**

(6 marks)

6. Alex is making this brick pattern.

Pattern 1   Pattern 2   Pattern 3   Pattern 4

a) **Draw** pattern 4 in the space provided above.
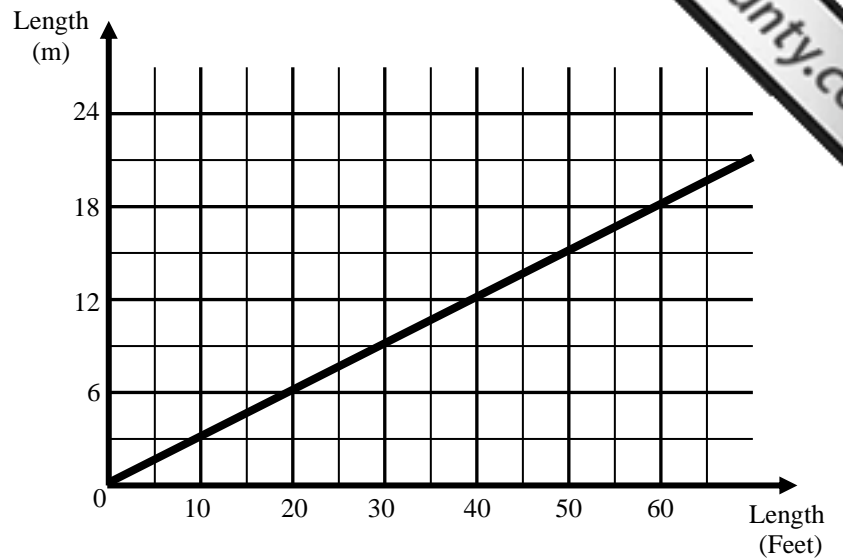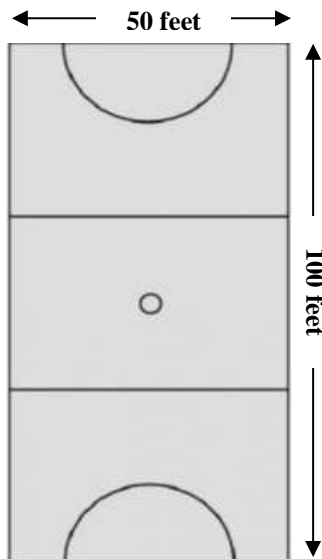
b) **Fill in** the table below.

Pattern	1	2	3	4	5	
Bricks Used	1	4				36

c) **Pattern 8** is made up of _____ bricks.

d) Alex needs 100 **bricks** to make pattern _____.

(8 marks)

7. The diagram shows a netball court with measurements given in feet.

50 feet

100 feet

Length (m)

24

18

12

6

0   10   20   30   40   50   60   Length (Feet)

a) Use the graph to **complete** the following:

i)   _____ feet = 6 m

ii)   50 feet   = _____ m

iii)   100 feet   = _____ m

b) Work out the **area** of the netball court in m².

Area = _____ m²

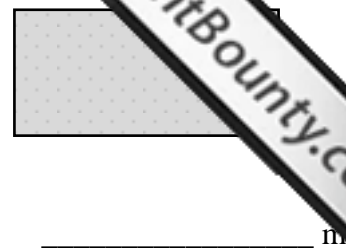c) The rectangle in the middle of the court is 30 feet long.

i)   30 feet = _____ m

ii)   Work out the area of **this rectangle** correct to the nearest m².

Area = _____ m²

(8 marks)

8. A rectangular field is $(2x - 3)$ m long and x m wide.

   a) Write down an **expression** for the perimeter of the field.
      Simplify your answer.

      _____ m

   b) The **perimeter** of the field is 36 m.
      Form an equation and **solve** it to find the value of x.

      $x =$ _____ m
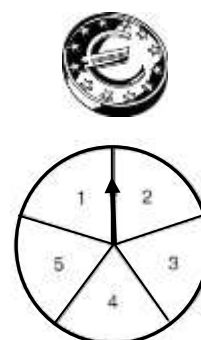
   c) Use your answer to question (b) to work out the **length** of the field.

      _____ m

      (6 marks)

9. Alison had a coin and a spinner. She tossed the coin and turned the spinner together.

   a) **Complete** the possibility space below.

      Spinner

		1	2	3	4	5
Coin	Heads	H1			H4	
	Tails		T2			T5

   Work out the **probability** that:

   b) Alison gets **heads** on the coin and an **odd number** on the spinner.

      _____

   c) Alison gets **tails** on the coin and a number **less than 3**.

      _____

10. The **regular** hexagon ABCDEF is drawn inside the circle with centre O. The hexagon is made up of **six congruent equilateral** triangles.

    Work out:

    a) Angle AOB.

    _____°

    b) Angle ABO.

    _____°

    c) The size of **one interior angle** of the hexagon.
       (E.g.: Angle ABC)

    _____°

    d) The **sum** of the **interior angles** of the hexagon.

    _____°

    e) <u>Underline</u> the correct answer. **ABCD** is a:
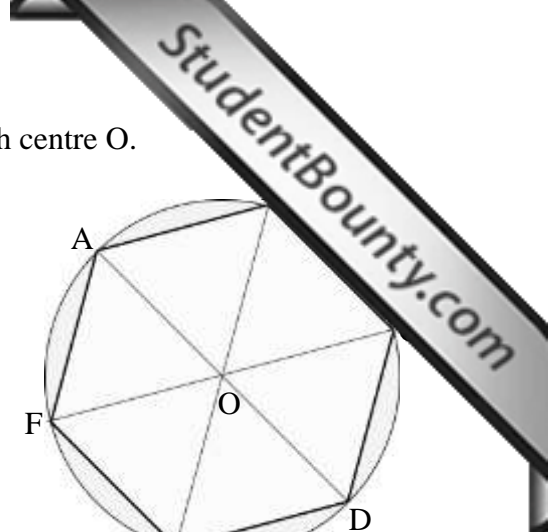
    | Rhombus | Kite | Trapezium | Rectangle |

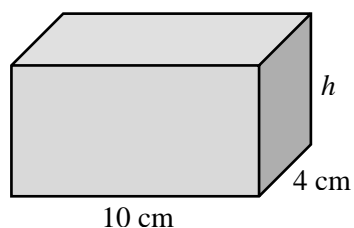   (8 marks)

11. a) **Cuboid A** is 6 cm long, 12 cm wide and 9 cm high.
       Work out the **volume** of cuboid A.

    Volume = _____ cm^3

    b) **Cuboid B** has a volume of 512 cm^3. Work out its **height** h.

11. c) Amy designs a **cube** with sides 4.5 cm. Work out:

   i)   The **volume** of the cube.

   _____

   ii) The **area** of **one face** of the cube.

   _____ cm^2

   iii) The **total surface area** of the cube.

   _____ cm^2

(10 marks)

12. **Fill in** below.
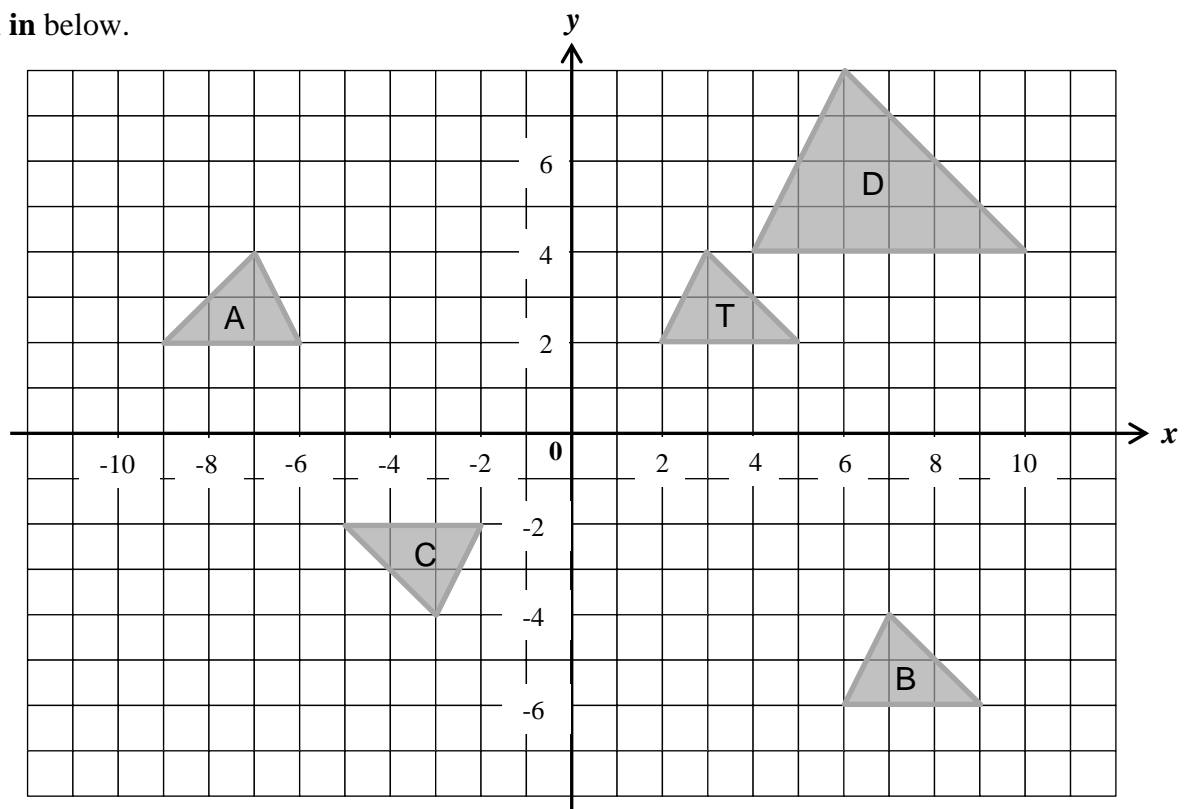
a) Triangle _____ is a **reflection** of triangle T in the line $x = -2$.

b) Triangle D is an **enlargement** of triangle T by scale factor _____.

c) Triangle _____ is a **rotation** of triangle T by _____° about the origin.

d) Triangle B is a **translation** of triangle T by _____ squares right and 8 squares _____.

e) Triangles _____ and _____ are **similar**.

f) Triangles _____ and _____ are **congruent**.

(10 marks)

END OF PAPER

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