DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION Department for Curriculum Management and eLearning Educational Assessment Unit
Annual Examinations for Secondary Schools 2013

FORM 3
MATHEMATICS SCHEME C
TIME: 30 minutes
Non Calculator Paper

Name: $\qquad$ Class: $\qquad$

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |  |

## INSTRUCTIONS TO CANDIDATES

- Answer all questions.
- This paper carries a total of 25 marks.
- Calculators and protractors are not allowed.

1. a) Work out the following sum, giving your answer to its lowest terms.

$$
\frac{1}{3}+\frac{5}{12}=\frac{5}{12}+\frac{5}{12}=\frac{}{12}=
$$

b) Shade $\frac{7}{10}$ of this rectangle.

|  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |

2. Estimate $\mathbf{5 9 . 3 4} \div \mathbf{3}$. Choose the correct answer.
a) 2
b) 19.78
c) 20

Ans: $\qquad$
(2 marks)
3. Put in order, largest first.
$0.39,0.139, \frac{1}{4}, 0.14$
Ans: $\qquad$ , $\qquad$ , $\qquad$ , $\qquad$
(3 marks)
4. Fill in the missing numbers in these sequences:
a) 1.3, 1.5, 1.7, 1.9, $\qquad$
b) $6,8,11,15$, $\qquad$ 26

## 5. a) Fill in:

i) $\quad \mathbf{3 . 4 5 ~ k m}=$ $\qquad$
ii) hours $=\mathbf{2 1 0}$ minutes
b) Tom is filling a tank with water. Which unit from $\boldsymbol{k g},{ }^{\circ} \boldsymbol{C}, \boldsymbol{m m}, \boldsymbol{l}$ and $\boldsymbol{k m}$ should he use:
i) to measure the volume of water in the tank? $\qquad$
ii) to measure the temperature of the water? $\qquad$
6. Solve the equation:

$$
7 c+1=29
$$

$$
c=
$$

$\qquad$
(2 marks)
7. Work out the following:

$$
3 \times(4+1)
$$

Ans: $\qquad$
(2 marks)
8. This LOGO statement draws a square of side 100 turtle steps. Fill in the missing parts.

Repeat $\qquad$ [FD $\qquad$ RT 90]

9. Sue throws a coin and an ordinary dice.
a) Complete the possibility space below to show all the possible outcomes.


DICE

|  |  | 1 | 2 | 3 | 4 | 5 | 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| COIN | H | (1, H) |  |  | $(4, \mathrm{H})$ |  | (6, H) |
|  | T | $(1, \mathrm{~T})$ |  | $(3, \mathrm{~T})$ |  |  | $(6, \mathrm{~T})$ |

b) What is the probability that Sue gets a number greater than 4 and a head?

Ans: $\qquad$
c) What is the probability that Sue gets a 7 and a tail?

Ans: $\qquad$
(4 marks)

## END OF PAPER

DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION
Department for Curriculum Management and eLearning
Educational Assessment Unit
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FORM 3
MATHEMATICS SCHEME C
TIME: 1h 30min
Main Paper

| $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ | $\mathbf{7}$ | $\mathbf{8}$ | $\mathbf{9}$ | $\mathbf{1 0}$ | $\mathbf{1 1}$ | $\mathbf{1 2}$ | $\mathbf{1 3}$ | $\mathbf{1 4}$ | $\mathbf{N C}$ | Main | Total |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Name: $\qquad$ Class: $\qquad$

Calculators are allowed but the necessary working must be shown. Answer all questions.

1. Work out using a calculator. Give your answer correct to $\mathbf{1}$ decimal place.

$$
\frac{6.973 \times 4.95}{0.127}=
$$

$\qquad$
2. a) Factorise:

$$
6 t+10 p=\_\quad\left(\_\_\quad t+\ldots \quad p\right)
$$

b) Multiply out the brackets:

$$
4(2 p-3 q)=
$$

$\qquad$
3. Emily goes to a fruit shop to buy some apples and bananas. The fruit shop sells apples at $\mathbf{2 5} \boldsymbol{c}$ each and bananas at $\mathbf{3 0} \boldsymbol{c}$ each. Emily uses the formula

$$
C=25 a+30 b
$$

to find the cost of the fruit in cent, where $\boldsymbol{a}$ is the number of apples and $\boldsymbol{b}$ is the number of bananas.
How much does Emily pay if she buys 7 apples and 6 bananas?


Ans: $\qquad$
(3 marks)
4. The list below shows the ages in years of a group of students going for an outing:

$$
16,13,12,12,14,13,11,11,15,16
$$

a) Work out the range.

> Ans:
$\qquad$
b) What is the mean age?

Ans: $\qquad$
(4 marks)
5. Carl needs to paint the walls of his house light blue. He mixes white paint and blue paint in the ratio $5: 1$. Carl thinks that he will need 24 litres of paint in all. How much white paint and how much blue paint should he buy?


White paint: $\qquad$ litres

Blue paint: $\qquad$ litres
(3 marks)
$\qquad$ Class: $\qquad$
6. a) Write down the name of these $2 \mathrm{D} / 3 \mathrm{D}$ shapes - choose from the list below. hexagon, pyramid, cylinder, cone, pentagon, triangular prism


Shape A $\qquad$ Shape B $\qquad$ Shape C $\qquad$
b) Shape A has $\qquad$ lines of symmetry.
7. The diagram shows the cross section of a prism made up of a triangle $\mathbf{X}$ and a square Y. Work out:
a) the area of triangle $\mathbf{X}$
b) the area of square $\mathbf{Y}$
$\qquad$ $\mathrm{cm}^{2}$
d) the volume of the prism if the length of the prism is $\mathbf{1 0} \mathbf{~ c m}$.
$\qquad$
8. Trisha works in a factory. She is paid $\boldsymbol{\epsilon} \mathbf{3 . 5 0}$ per hour. Overtime is paid at $\boldsymbol{\epsilon} \mathbf{4 . 7 0}$ per hour.
a) During the first week of June, Trisha works 40 hours plus 5 hours overtime. How much is her pay for this week?
$\qquad$
b) All workers in Trisha's factory are to get a $\mathbf{1 0 \%}$ increase added to their pay. What will Trisha's pay be now?
9. a) Construct the isosceles triangle $A B C$ where $A B$ is $\mathbf{5 c m}$ and both $A C$ and $B C$ are 7.5 cm .


## A

b) Now, bisect side AC and let the bisector meet BC at X .
c) Measure $\mathrm{CX} . \quad \mathrm{CX}=$ $\qquad$ cm
d) Measure angle A. Angle A = $\qquad$ ${ }^{\circ}$
10. a) Find the angles marked with letters.


$$
f^{\circ}=
$$

$\qquad$
$g^{\circ}=$ $\qquad$
b) This is a regular octagon. Work out the size of angle $\boldsymbol{h}$.

$$
\boldsymbol{h}^{\circ}=\ldots
$$


c) i) Find angle $\boldsymbol{k}$ in the quadrilateral.

$$
\boldsymbol{k}^{\circ}=
$$

$\qquad$ -
ii) Two lines in the quadrilateral are parallel. Which are they?

$\qquad$ and $\qquad$
11. Fabian asked his schoolmates about their favourite summer activity. The following are their preferences:
swimming reading swimming hiking swimming swimming $\begin{array}{cccccc}\text { reading } & \text { hiking } & \text { hiking } & \text { swimming } & \text { swimming } & \text { gardening } \\ \text { hiking } & \text { swimming } & \text { gardening } & \text { swimming } & \text { reading } & \text { hiking }\end{array}$
a) Complete the frequency table below by filling the tally and the frequency columns.
b) Now Fabian wants to represent this information on a pie chart. Complete the table by finding the angles. Then draw and label the pie chart.

| Summer <br> Activity | Tally | Frequency | Angle |
| :---: | :---: | :---: | :---: |
| Swimming |  |  | $160^{\circ}$ |
| Reading | $/ / /$ | 3 | $60^{\circ}$ |
| Hiking |  |  |  |
| Gardening | $/ /$ | 2 |  |
| TOTAL |  | 18 | $360^{\circ}$ |

c) What is the most frequently chosen activity (mode)? $\qquad$
12. a) The equation of a straight line is $\boldsymbol{y}=2 \boldsymbol{x}+\mathbf{3}$. Complete the table below.

| $\boldsymbol{x}$ | $\mathbf{- 2}$ | $\mathbf{- 1}$ | $\mathbf{0}$ | $\mathbf{1}$ | $\mathbf{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{2 x}$ | -4 |  |  | 2 | 4 |
| $+\mathbf{3}$ |  | +3 |  | +3 | +3 |
| $\boldsymbol{y}$ | -1 | 1 |  | 5 |  |

b) Plot the points and join them to form a straight line.
c) Write down the coordinates of the $y$ intercept (the point where the line cuts the $y$-axis).


Coordinates of $y$ intercept $=($ $\qquad$ , $\qquad$ )
(7 marks)
13. Stephan uses this number machine to change the temperature from degrees Fahrenheit ( ${ }^{\circ}$ F) to degrees Celsius ( ${ }^{\circ} \boldsymbol{C}$ ).


In a cake recipe, the temperature needed to cook a cake is $\mathbf{3 5 0}{ }^{\circ} \boldsymbol{F}$. What is the temperature in ${ }^{\circ} \boldsymbol{C}$, giving your answer to $\mathbf{2}$ d.p.?

$\qquad$
14. a) Translate triangle $P, 5$ to the left and $\mathbf{4}$ up. Name the triangle $Q$.
b) Reflect triangle P in the line $y=5$ to obtain triangle S .

c) Underline the correct words:

Rotate triangle P by ( $90^{\circ}$ clockwise, in the $y$-axis, $90^{\circ}$ anticlockwise ) about $(0,0)$ to obtain triangle T.

## END OF PAPER

