| FORM 5 | MATHEMATICS SCHEME C <br> Non-Calculator Paper | TIME: 20 minutes |
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Name: $\qquad$ Class: $\qquad$


## INSTRUCTIONS TO CANDIDATES

- Answer all questions. There are 20 questions to answer.
- Each question carries 1 mark.
- Calculators, protractors and other mathematical instruments are not allowed.
- You are not required to show your working. However space for working is provided if you need it.

| No. | QUESTION | SPACE FOR WORK <br> (IF REQUIRED) |
| :---: | :---: | :---: |
| 1. | Work out: $13+6 \times 2$. <br> Ans |  |
| 2. | The exterior angle of a regular polygon is $60^{\circ}$. The polygon has: <br> A) 4 sides <br> B) 5 sides <br> C) 6 sides <br> D) 8 sides. <br> Ans $\qquad$ |  |
| 3. | Write down a multiple of 5 between 61 and 79. <br> Ans |  |
| 4. | Simplify: $1-\frac{2}{5}$. <br> Ans $\qquad$ |  |
| 5. | Find 5\% of $€ 60$. <br> Ans $€$ |  |
| 6. | What is the value of $3.75 \div 100$ ? <br> Ans |  |
| 7. | In a football league, my team won $50 \%$ of the matches and drew $38 \%$. What percentage of the matches did it lose? <br> Ans $\qquad$ |  |
| 8. | The diameter of a circle is 13 cm . What is the length of its radius? <br> Ans $\qquad$ |  |
| 9. | Given that $y=3 x-2$, what is the value of $y$ when $x=4$ ? <br> Ans $\qquad$ |  |


| No. | QUESTION | SPACE FOR WORK <br> (IF REQUIRED) |
| :---: | :---: | :---: |
| 10. | The turtle starts at the position shown. <br> It draws the given figure for this set of LOGO commands: <br> PD FD 50 LT 90 FD 50 $\qquad$ PU HOME. <br> Choose the correct missing command from: <br> A) RT 90 <br> B) FD 100 <br> C) LT 90 <br> D) BK 100 <br> Ans $\qquad$ |  |
| 11. | Pamela was using a spreadsheet to work out the simple interest for one year on $€ 500$ at $2 \%$ per annum. <br> In cell A1 she typed 500 for the principal. <br> In cell $\mathbf{A 2}$ she typed 2 for the rate. <br> In cell $\mathbf{A 3}$ she typed 1 for the time. <br> Choose the correct formula that Pamela would type in cell A4 to obtain the value of the simple interest. <br> A) $=A 1 * A 2 * A 3$ <br> B) $=\mathbf{A 1} * \mathbf{A} 2 * \mathbf{A} 3 / 100$ <br> C) $=\mathbf{A} 1 * \mathbf{A} 2 * \mathbf{A} 3 * 100$ <br> D) $=(\mathbf{A} 1+\mathbf{A} 2+\mathbf{A} 3) / 100$ <br> Ans $\qquad$ |  |
| 12. |  |  |
| 13. | Ten students obtained the following marks in a test: $33,34,45,45,56,56,62,62,62,75 .$ <br> What is the mode in this set of marks? <br> Ans $\qquad$ |  |
| 14. | A book costs $€ 23.50$. What is the cost of 4 similar books? <br> Ans $\qquad$ |  |


| No. | QUESTION | SPACE FOR WORK <br> (IF REQUIRED) |
| :---: | :---: | :---: |
| 15. |  <br> What fraction of the whole figure is the shaded part? <br> Ans $\qquad$ |  |
| 16. | Simplify: $\frac{1}{2}+\frac{1}{4}$. <br> Ans |  |
| 17. | What is the size of angle $x$ in the given figure? <br> Ans $\qquad$ |  |
| 18. | Change $2 \frac{3}{8}$ to an improper fraction. |  |
| 19. | Yesterday the temperature in Oslo at 9:00 pm was $-5^{\circ} \mathrm{C}$. <br> At midnight, the temperature was $-12^{\circ} \mathrm{C}$. By how much did the temperature fall? <br> Ans $\qquad$ |  |
| 20. | The length of a rectangle is 20 cm and the width is 10 cm . The semicircle has an area of $157 \mathrm{~cm}^{2}$ correct to 3 significant figures. <br> Choose the correct answer for the shaded area. <br> A) $200 \mathrm{~cm}^{2}$ <br> B) $157 \mathrm{~cm}^{2}$ <br> C) $43 \mathrm{~cm}^{2}$ <br> D) $357 \mathrm{~cm}^{2}$. <br> Ans $\qquad$ |  |


| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | Total <br> Main | Non <br> Calc. | GLOBAL <br> MARK |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Name: $\qquad$

CALCULATORS ARE ALLOWED. SHOW ALL NECESSARY WORKING. ANSWER ALL QUESTIONS.

1. Work out the following:
a) $(-4)+(-5)$
b) $(12)-(-3)$
c) $(-3)^{2}$
d) $(-30) \div(-5)$
$\qquad$
(4 marks)
2. a) Work out the value of $1 \%$ of $€ 360$.
b) Calculate $25 \%$ of $€ 360$.
c) Complete the statement:

$$
\square \% \text { of } € 360+20 \% \text { of } € 360=€ 93.60
$$

$\qquad$
3. a) Fill in the blank space to write down a fraction equivalent to $\frac{3}{4}$ :

b) Work out the value of $\left(\frac{3}{4}-\frac{1}{8}\right) \times 16$.
c) A group of 12 children share 72 biscuits equally among them. How many biscuits does each child get?
4. a) Write down the next two terms in these number patterns:
(i) $20,17,14,11$, $\qquad$ , $\qquad$ .
(ii) $3,6,12,24$, $\qquad$ , $\qquad$ .
b) Use the formula $\mathrm{P}=20-3 n$, to find the value of P when $n=20$.
(6 marks)
5. a) Factorise completely: $6 x-36$.
b) Expand: 7(2x-3).
c) Expand and simplify: $6(x-6)-7(2 x-3)$.
$\qquad$ Class $\qquad$
6. Paul used a spreadsheet to calculate the perimeter of a rectangle of length 24 cm and breadth 15.5 cm .

|  | A | B | C |
| :---: | :--- | :---: | :---: |
| 1 | Length in cm | 24 |  |
| 2 | Breadth in cm | 15.5 |  |
| 3 | Perimeter in cm |  |  |
| 4 | Area in $\mathrm{cm}^{2}$ |  |  |

a) One of these formulae can be used by Paul in cell B3 to obtain the perimeter of the rectangle. Which one is it?
(i) $=\mathrm{B} 1+\mathrm{B} 2$
(ii) $=\mathrm{B} 1+\mathrm{B} 2 * 2$
(iii) $=\mathrm{B} 1 * 2+\mathrm{B} 2$
(iv) $=(\mathrm{B} 1+\mathrm{B} 2) * 2$.
b) Work out the value for the perimeter of the rectangle that is obtained in cell B3.
c) Finish the formula for the area of a rectangle that can be used in cell B4 and calculate the area of the rectangle.
$\qquad$
7. a) Solve the equation $3 a-7=a+11$.


The equal sides of an isosceles triangle are $(4 x+5) \mathrm{cm}$ and $(3 x+8) \mathrm{cm}$.
(i) Use the above information to form an equation, in terms of $x$, for the equal sides of the triangle.
(ii) Solve this equation to find the value of $x$.
(iii) Use this value of $x$ to work out the length of one of the equal sides of the triangle.
8. a) On the given line, mark the point B such that AB is 7.5 cm long.
b) Construct an equilateral triangle ABC with AB as its base.
c) Mark a point D on AB produced such that BD is 3 cm . Join CD
d) Measure and write down the size of:
(i) Angle CBD
(ii) Angle ACD
$\qquad$

A
9.


The figure shows a regular 8 -sided figure with one of its exterior angles. The formula to find the sum of the interior angles is $(n-2) \times 180^{\circ}$ where $n$ is the number of sides.
a) Calculate the sum of all the interior angles.
b) The size of one of its interior angles.
c) The size of one exterior angle.
d) Underline the correct name of the 8-sided figure:
pentagon, hexagon, octagon, nonagon.
10. Give your answers correct to the nearest whole number.
a) Work out the area of a circle of radius 12 cm .

b) A square is drawn in a circle of radius 12 cm as shown in the figure. The side of the square is 17 cm , correct to the nearest whole number. Calculate the area of the square.
c) Work out the shaded area in the given figure.
11. Maria wants to know her telephone bill for the past 2 months.

There is a service charge of $€ 5.50$ per month.
a) Work out the bill for Maria.

Service charge for 2 months $=$ $\qquad$
120 phone calls at 12 c each $=$ $\qquad$
24 mobile calls at 32 c each $=$ $\qquad$

$$
\text { TOTAL }=\bar{\Longrightarrow}
$$

b) How much is this amount less than $€ 50$ ?
12.


Triangle ABC is joined to a square BCDE as shown in the i $A B=A C$ and angle $B A C$ is $30^{\circ}$.
a) Underline the correct name for triangle ABC :
(i) Equilateral
(ii) right-angled
(iii) isosceles
(iv) scalene.
b) Work out the size of:
(i) angle ACB
(ii) angle ACE
c) Calculate the sum of all interior angles of the figure ABEDC.
13. In a school there are 675 students. All of them voted for one student in an election for the School Students' Council. The table shows the result.

| Student | Simon | John | Paul | Charles | Daniel | Alan |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Votes | 100 | 150 | 50 | 125 |  | 75 |

a) How many students voted for Daniel?
b) Show this information on the histogram by shading the columns.


## End of Examination

