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

FORM 2   **MATHEMATICS SCHEME A**   **TIME: 30 minutes**
Non-Calculator Paper

Name: _____   **Class:** _____

Question	1	2	3	4	5	6	7	8	9	10	**Total**
Mark											

Instructions to Candidates

- **Answer all questions.**

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

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

1. Work out the following:
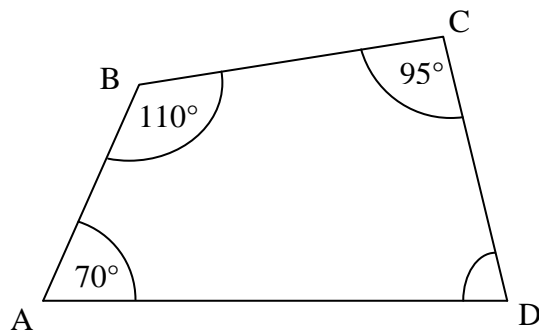
a) $27 - 72 =$ _____

b) $275 + (-126) =$ _____

c) $275 - (-126) =$ _____

(3 marks)

2. In the quadrilateral shown what is the value of $\angle D$?

$\angle D =$ _____$^\circ$

(2 marks)

3. Evaluate:

a) $87 \times 9 =$ _____

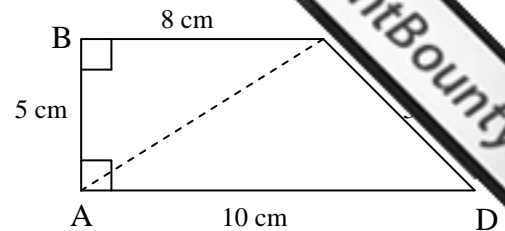b) $32 \div (-16) =$ _____

c) $203 \div 7 \times 9 =$ _____

(3 marks)

4. John was facing North West. He turned clockwise until he was facing due South. Through how many degrees did he turn?

_____

(1 mark)

5. The diagram shows the trapezium ABCD.
AB is perpendicular to BC and AD.
Calculate:

a) the perimeter of ABCD.

perimeter = _____ cm

b) the area of ABCD.

area = _____ cm^2

(3 marks)

6. Solve: $7(y - 8) = 3(13 - y)$

y = _____

(3 marks)

7. Work out an estimate, giving your answer correct to the **nearest ten**:

$$\frac{78.9 \times 21.7}{4.6 + 5.4} =$$

_____

(2 marks)

8. Evaluate: a) $1\frac{1}{2} - \frac{2}{3}$

b) $2 \times \left(\frac{2}{3} - \frac{1}{4}\right) \div \left(\frac{1}{2} + \frac{3}{4}\right)$ Give your answer in its simplest form.

_____

(3 marks)

9. Ann throws a normal 6-sided die. What is the probability of getting:

a) a number greater than 1? _____

b) the number 7 ? _____

(2 marks)

10. In the diagram AB and CD are parallel, ∠EAB = 47°, ∠DAC = 90°.
Calculate, giving reasons in part (b) and (c):

a) ∠BAD

∠BAD = _____ °

b) ∠ADC

∠ADC = _____ ° (_____)

c) ∠ACD

∠ACD = _____ ° (_____)
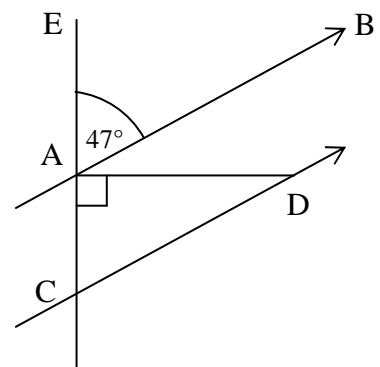
(3 marks)

END OF PAPER

SECONDARY SCHOOL ANNUAL EXAMINATIONS 2009
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FORM 2   **MATHEMATICS SCHEME A**   **TIME: 1h 30min**
Main Paper

Question	1	2	3	4	5	6	7	8	9	10	11	12	Total Main	Non Calc	**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. Evaluate : $\sqrt{\dfrac{72.2 \times 41.8}{100.71 + 20.0084}}$

_____
(2 marks)

2. The interior angles of a triangle are $x°$, $(2x + 50)°$ and $(4x - 10)°$.
    a) Write down an equation in terms of x.

    b) Find the value of x.

    $x = $ _____

    c) Find the value of each angle.

    _____   _____   _____
    (5 marks)

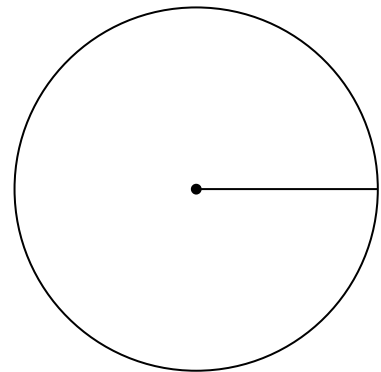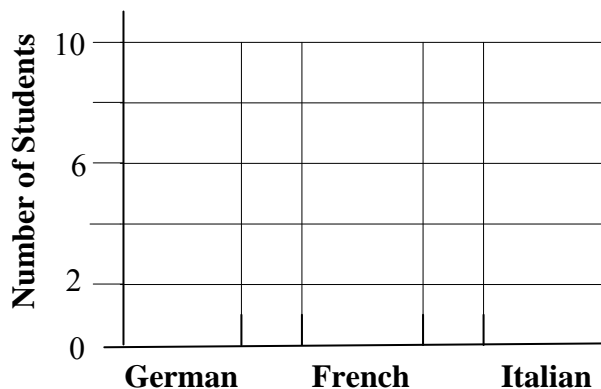3. There are 24 students in a class. $\frac{1}{3}$ of the students study German, 6 students study F____ the rest study Italian.

a) How many students study:

   i)   German?   _____

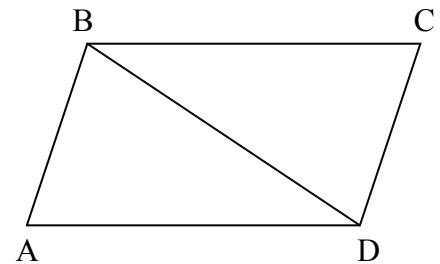   ii)   Italian?   _____

b) Draw a Bar chart and a Pie chart to illustrate this information.

(6 marks)

4   The diagram shows parallelogram ABCD. AB is x cm long, AD is $(2x + 5)$ cm long and BD is $2.4x$ cm long.
a) Evaluate the length of AB, AD and BD when $x = 10$.

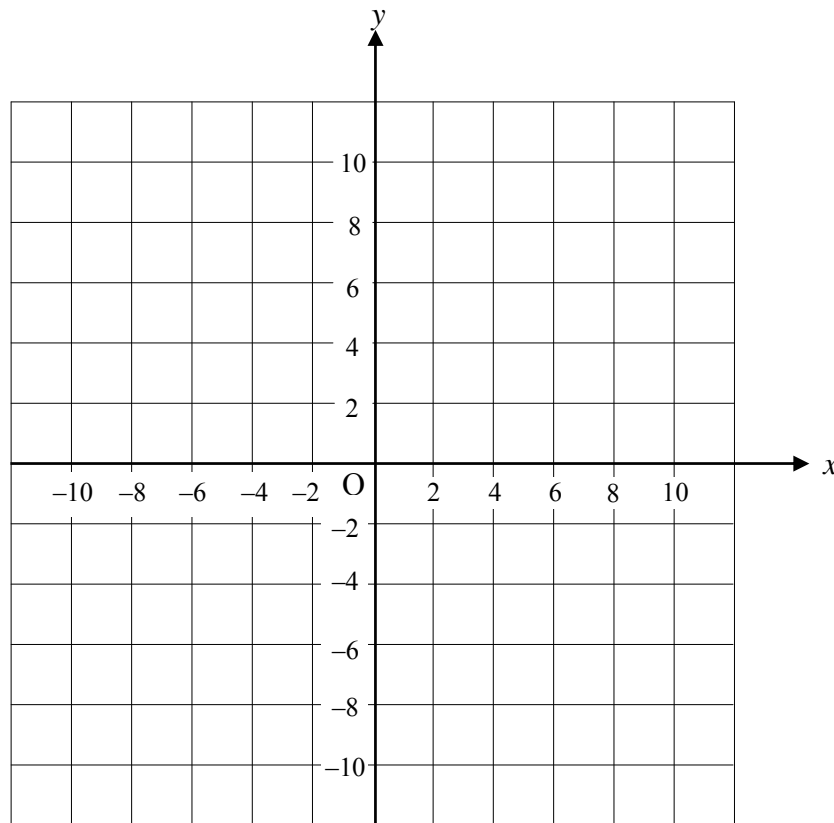   AB = _____cm   AD = _____cm   BD = _____cm

b) What is the perimeter of the **parallelogram** when $x = 10$?

                                                          _____cm
                                                        (5 marks)

Name: _____   **Class:** _____

5 a) On the grid provided plot and label points A (0, 10) ; B(2, 6); C (10, 10); D (6, 2)
       and E(10, 0). Join A to B, B to C, etc.
   b) Rotate shape ABCDE 180° clockwise about the origin. Label the image A′B′C′D′E′.
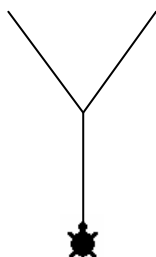   c) Reflect shape ABCDE in the *x* axis.

(10 marks)

6   Peter wants to draw the letter Y using LOGO. The Y must have a vertical line of symmetry. Complete the following set of commands so that the turtle traces out the letter Y. The turtle finally returns to the starting position.
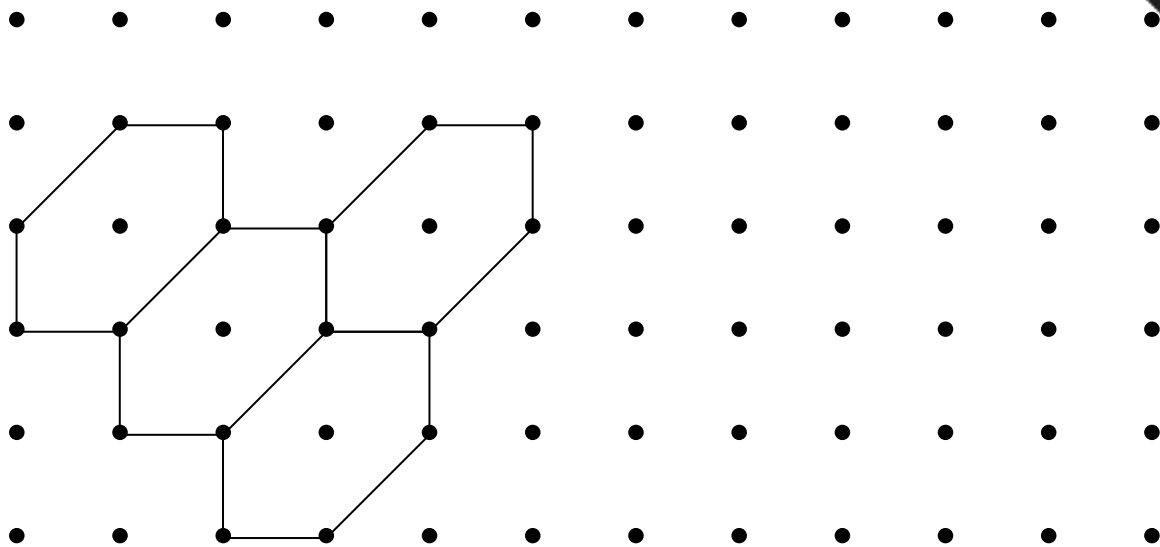
PD
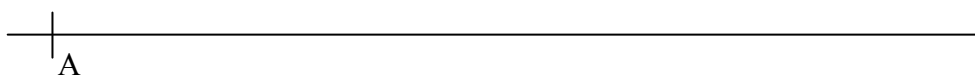**FD 100 LT 35 FD 85 BK _____ RT _____ FD _____   _____ 85 _____ 35 BK _____**

Not to scale

(7 marks)

7. Continue the pattern by adding 2 more hexagonal tiles:

(4 marks)

8. On the given line mark point B such that AB = 10 cm.
At A draw ∠ BAC equal to 35°.
At B draw ∠ABC equal to 100°.
Join AC and BC.
Measure BC.

A

BC = _____ cm

(5 marks)

9. In an exercise on Statistics Tom had to work out the mean, mode and median of three numbers using a spreadsheet:

	A	B	C	D	E	F	G	H
1						Mean	Mode	Median
2	**Set 1**	40	40	50	70	50	40	45
3	**Set 2**	28	41	41	85			
4	**Set 3**	10	20	60	110			

a) Which of the following formulae should Tom write in cell **F3**?
= **B3** + **C3** + **D3** + **E3**;   = **D3**;   = Sum(**B3**:**E3**) / 4   = _____

b) Fill in cells **F3**, **G3** and **H4** with the appropriate value.

(5 marks)

10. The diagram shows a plastic container. The container is a cuboid that is 8 cm long, 6 cm wide, 11 cm high.
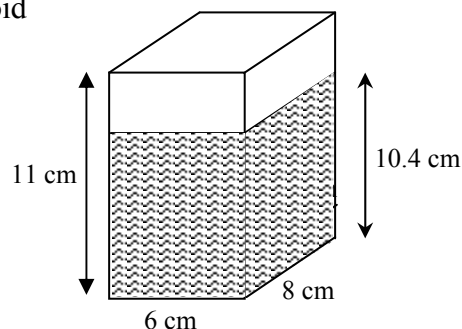
a) Work out the volume of the container if **completely** full.

11 cm   10.4 cm   8 cm   6 cm

_____cm^3

b) The container is **partly** filled with water to a depth of 10.4 cm.
Find the volume of water in the container.

_____cm^3

c) Work out the **volume** of **water** as a percentage of the **volume** of the **container**.
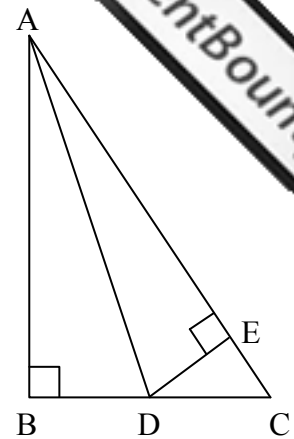Give your answer correct to **2 decimal places**.

_____%

(6 marks)

11. In triangle ABC, AB = 12 cm, BC = 5 cm, AC = 13 cm,
∠B = 90°. D is the midpoint of BC.
a) Work out the
i) area of ΔABC

_____ cm^2

ii) length of BD

_____ cm

iii) area of ΔABD

_____ cm^2

b) Show that the area of ΔADC = 15 cm^2.

c) DE is perpendicular to AC.
i) Write down an expression for the area of ΔADC in terms of AC and ED.

_____ cm^2

ii) Calculate the length of ED correct to 2 decimal places.

_____ cm

(10 marks)

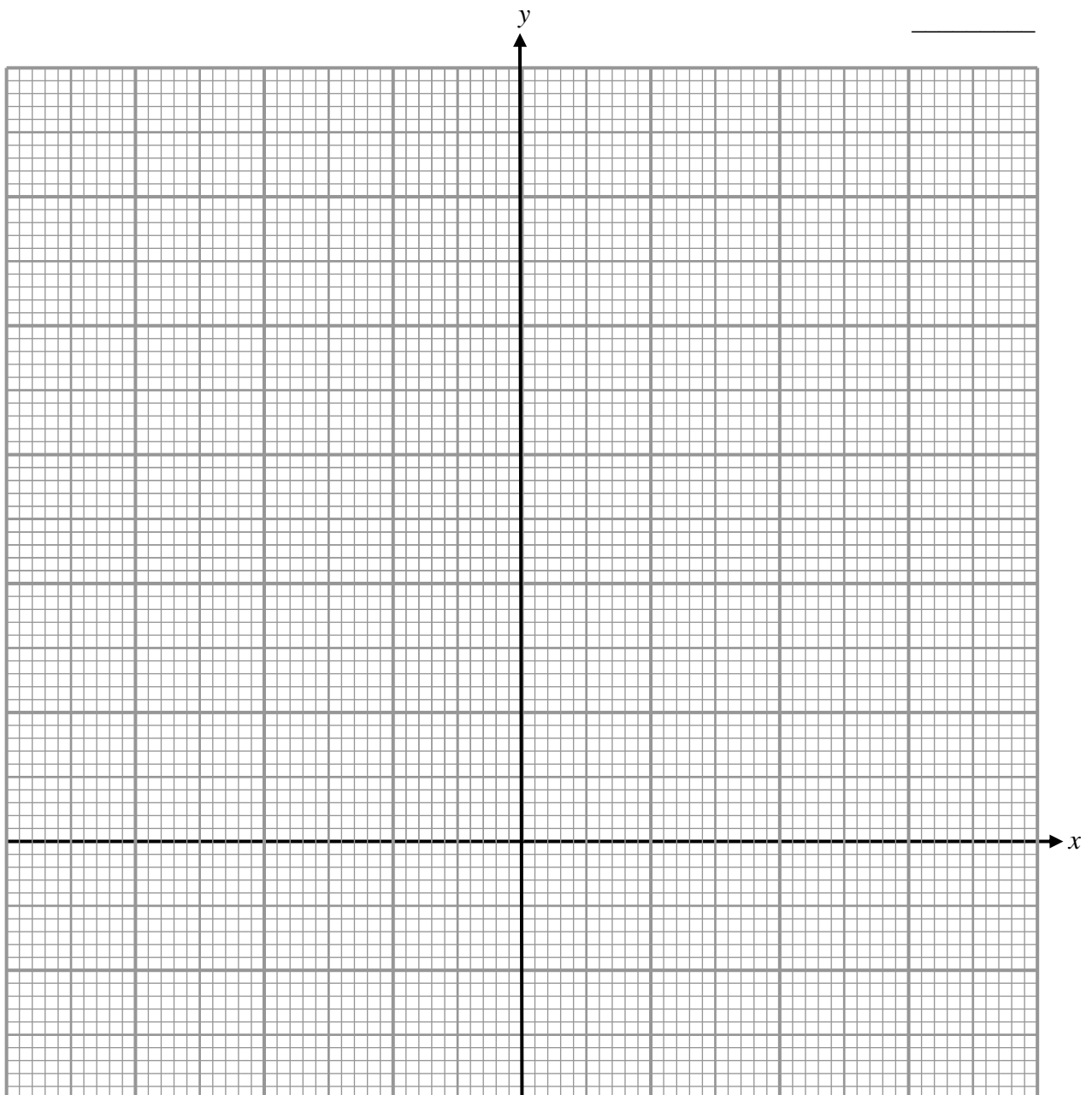12. a) Fill in the table for $y = 3x + 6$:

x	-3	-1	0	1	2
$3x$		-3		3	
$+6$			6		
y	-3				

b) Use your table to draw the graph of $y = 3x + 6$. Use 2 cm to represent 1 unit on the x axis and 2 cm to represent 2 units on the y axis.

c) Find the **gradient** of the graph.

_____

y

x

(10 marks)

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