SECONDARY SCHOOL ANNUAL EXAMINATIONS 2009

Directorate for Quality and Standards in Education
Educational Assessment Unit

A

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)

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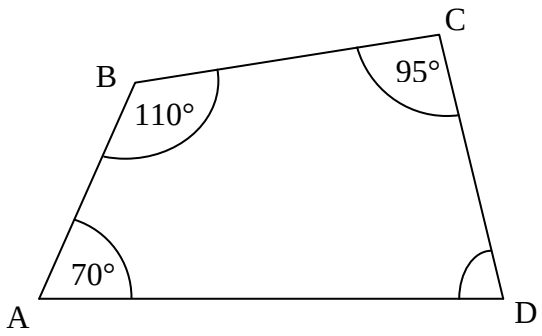
2. In the quadrilateral shown what is the value of $\angle D$?



$\angle D$ = _____°

(2 marks)

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3. Evaluate:

a) 87×9 = _____

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

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

(3 marks)

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

_____

(1 mark)

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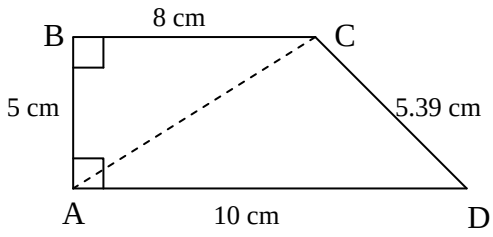
5. The diagram shows the trapezium ABCD.
AB is perpendicular to BC and AD.
Calculate:



a) the perimeter of ABCD.

perimeter = _____ cm

b) the area of ABCD.

area = _____ cm^2

(3 marks)

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

y = _____

(3 marks)

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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)

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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)

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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)

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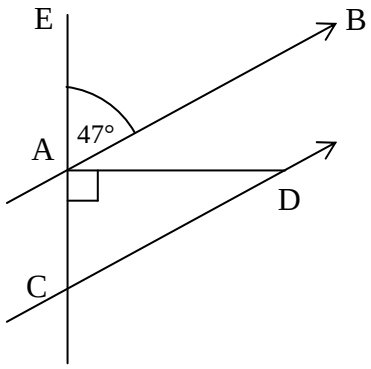
10. In the diagram AB and CD are parallel, ∠EAB = 47°, ∠DAC = 90°.
Calculate, giving reasons in part (b) and (c):



a) ∠BAD

∠BAD = _____°

b) ∠ADC

∠ADC = _____° (_____)

c) ∠ACD

∠ACD = _____° (_____)

(3 marks)

END OF PAPER

SECONDARY SCHOOL ANNUAL EXAMINATIONS 2009

Directorate for Quality and Standards in Education
Educational Assessment Unit

A

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)

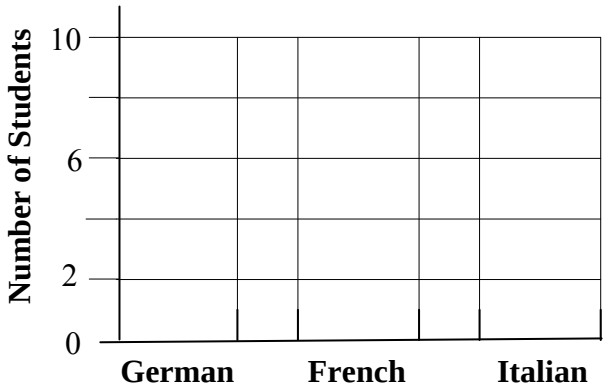
3. There are 24 students in a class. $\frac{1}{3}$ of the students study German, 6 students study French and the rest study Italian.

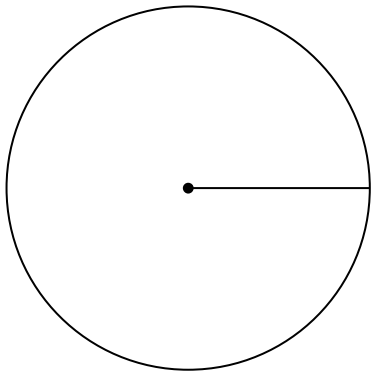
a) How many students study:

i) German? _____

ii) Italian? _____

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

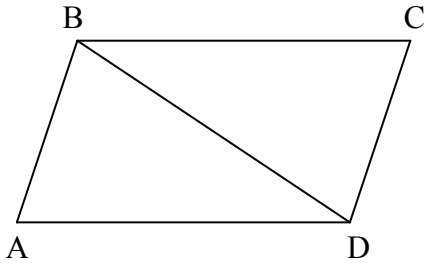




(6 marks)

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

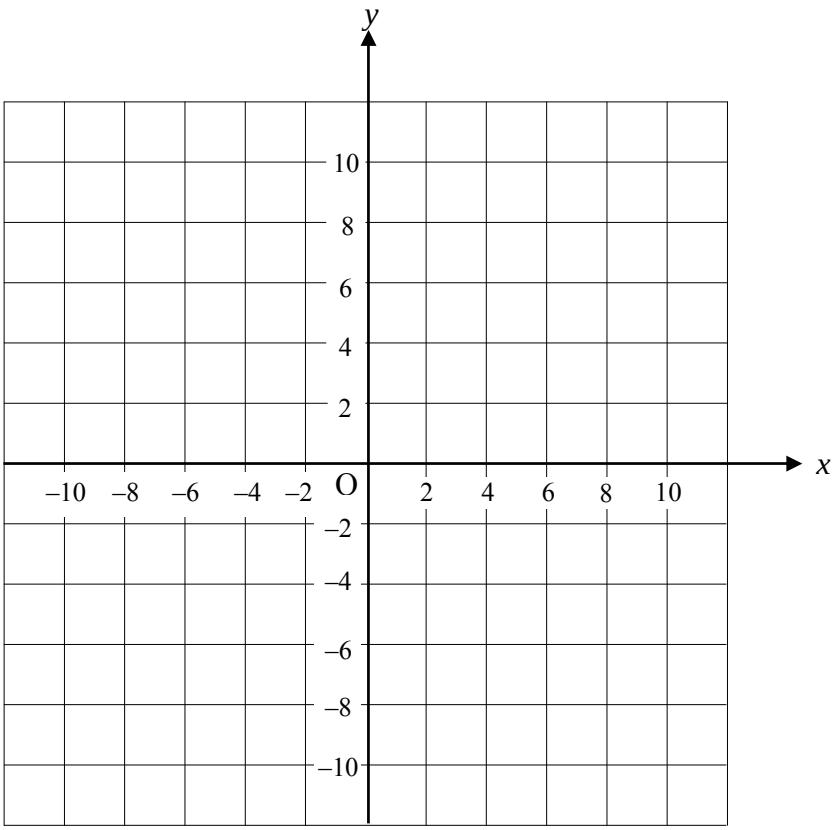
b) What is the perimeter of the **parallelogram** when $x = 10$?

_____cm

(5 marks)

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

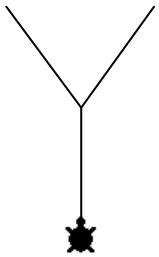
5 a) On the grid provided plot and label points A (0, 10) ; B(2, 6); C (10, 10); D (6, 2) and E(10, 0). Join A to B, B to C, etc.
b) Rotate shape ABCDE 180° clockwise about the origin. Label the image A′B′C′D′E′.
c) Reflect shape ABCDE in the *x* axis.



(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.

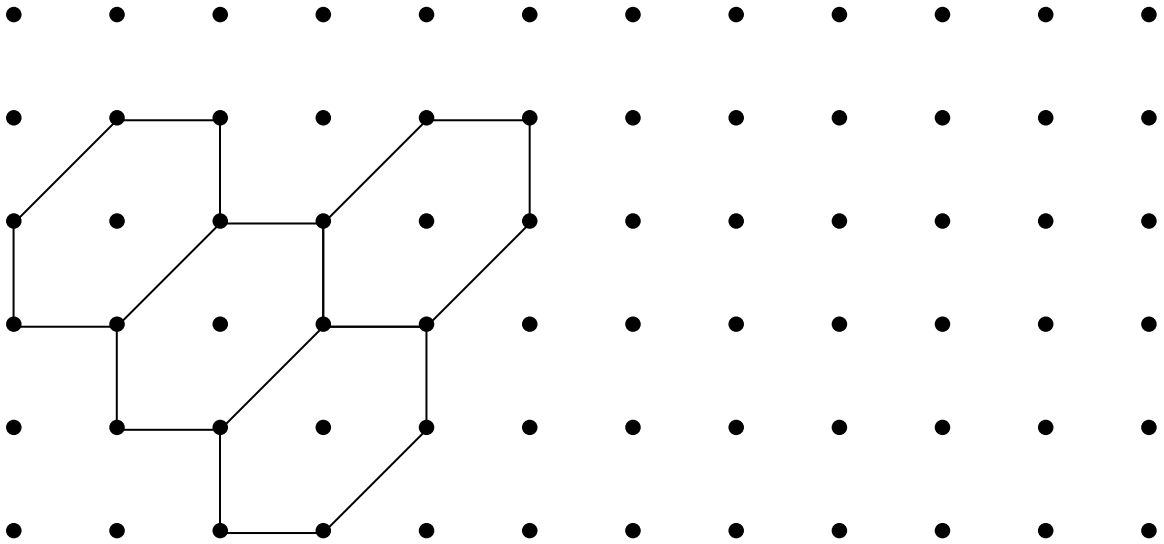
PD
FD 100 LT 35 FD 85 BK _____ RT _____ FD _____ _____ 85 _____ 35 BK _____



Not to scale

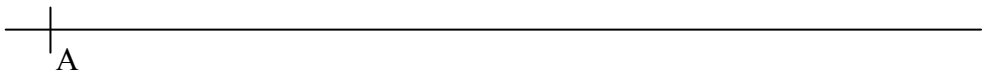
(7 marks)

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.



BC = _____cm

(5 marks)

9. In an exercise on Statistics Tom had to work out the mean, mode and median of three sets of 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)

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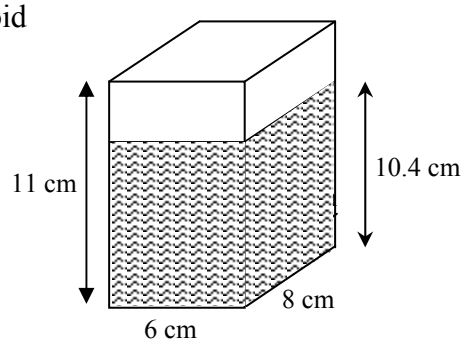
10. The diagram shows a plastic container. The container is a cuboid that is 8 cm long, 6 cm wide, 11 cm high.



a) Work out the volume of the container if **completely** full.

_____ 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.

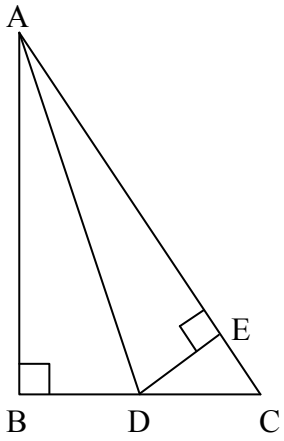
_____ cm^3

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

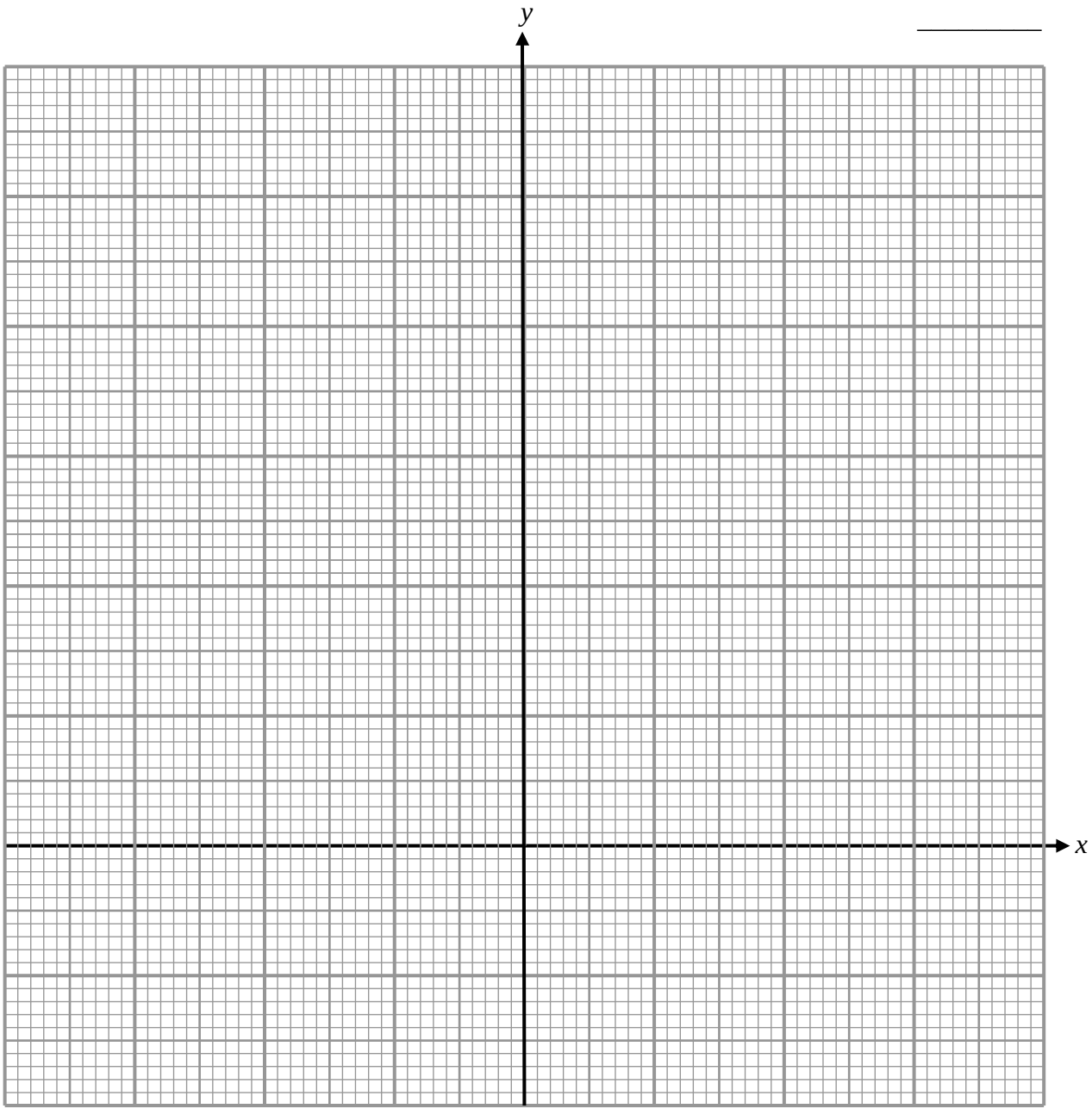
(10 marks)

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.



(10 marks)

End of Paper

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