

SECONDARY SCHOOLS ANNUAL EXAMINATIONS 2001

Educational Assessment Unit – Education Division.

FORM 4

MATHEMATICS (MENTAL)

TIME: 15 min.

Name _____

Class _____

Mark

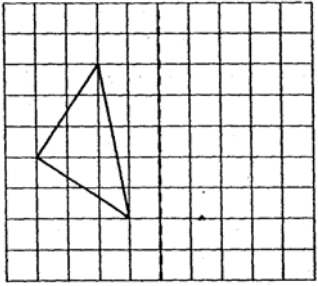
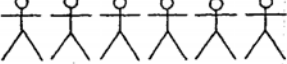
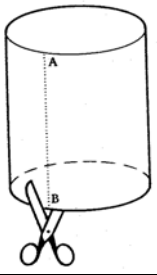
ANSWER ALL QUESTIONS.

EACH QUESTION CARRIES 1 MARK.

CALCULATORS, RULERS, PROTRACTORS AND OTHER MATHEMATICAL INSTRUMENTS ARE NOT ALLOWED.

WRITE DOWN YOUR ANSWER ONLY IN THE SPACE PROVIDED.

**DO
NOT
WRITE
IN
THIS
SPACE**

	QUESTION	ANSWER
1.	Colin is paid Lm2.50 an hour. How much does he earn in 8 hours?	
2.	What is $\frac{1}{2}$ of $\frac{1}{2}$?	
3.	Family Attard uses Clear Fresh toothpaste regularly. This is available in 2 sizes: A and B. Which one should they buy?  A 100g at 90c  B 50g at 50c	
4.	I stand facing North and turn to look South. What angle have I turned through?	
5.	The given triangle is reflected in the dotted line. Draw its reflection on the given grid. 	
6.	What is the next number in the sequence 1, 5, 9, 13, ___?	
7.	Work out the gradient of the line joining the points (1,1) (2,4).	
8.	The pictogram shows the population of a village in 1971, 1981 and 1991. 1971  1981  1991   represents 200 people How many people lived in this village in 1981?	
9.	The diagram shows a mathematical shape that has been made from a piece of cardboard. There is no top or bottom. A cut is made along the line AB and the card is opened flat. What is the shape of the card? 	
10.	If $x^3 = 27$, what is the value of x?	

SECONDARY SCHOOLS ANNUAL EXAMINATIONS 2001

Educational Assessment Unit - Education Division

FORM 4

MATHEMATICS (Main Paper)

TIME: 1 h 45 min

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total Main	Mental	Global Mark
Mark																		

DO NOT WRITE ABOVE THIS LINE

ANSWER ALL QUESTIONS

Name _____

Class _____

1. Work out the value of $2^3 \times 3^2 \times 4^0$.

(4 marks)

2. Wool is sold in 50g balls costing 40c each. A cardigan needs 860g of wool. How much will the wool cost? (include the cost of the wool that is left over).

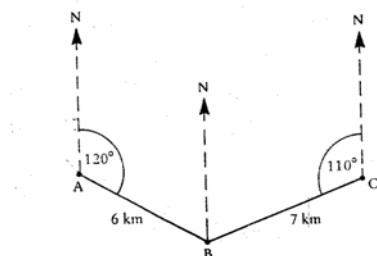


(4 marks)

3. Solve the equation: $2x + 4x + 6 - 3 = 15$.

(4 marks)

4. The diagram shows the bearings of towns A, B and C with respect to each other.



Use the diagram to complete the following statements:

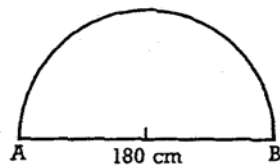
- a) the distance of B from A is _____ km on a bearing of _____⁰.
 b) the distance of C from B is 7km on a bearing _____⁰.

(4 marks)

5. a) Write down the prime numbers between 15 and 20. _____
- b) A number is chosen at random from the numbers 15 to 20 (15 and 20 included). What is the probability that it is a prime number?

(4 marks)

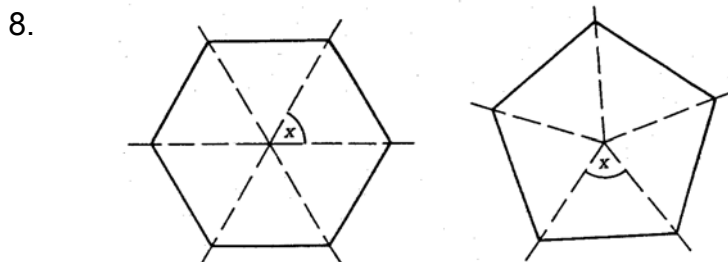
6. A semicircular rug has a diameter of 180cm.
- Work out
- the radius of the semicircle:
 - the length of the arc AB correct to 3 significant figures:
 - the perimeter of the rug in metres (use the answer in b).



(6 marks)

7. a) 62% of the population of a town are 35 years or older. The population is 12,600. How many people under 35 years live in the town?
- b) Jane earns Lm90 per week. She is promised a rise of 10%. What will be her new weekly wage?

(6 marks)



- What is the name of each of the regular polygons shown? _____, _____.
- Write down the order of rotation of each of them. _____, _____.
- Work out the size of the angles marked x in each figure.

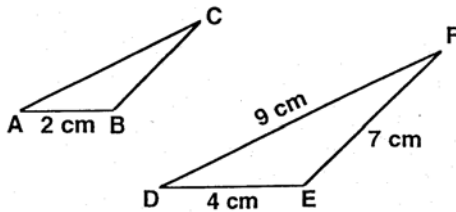
(6 marks)

9. a) A recipe for macaroni cheese sauce to serve **eight** gives the following ingredients:

40g flour
200g cheese
600ml milk

Work out the quantities of each ingredient to make this sauce for **6 people**.

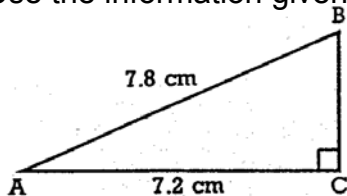
- b) Triangle DEF is an enlargement of triangle ABC.
Calculate the lengths of AC and BC.



(6 marks)

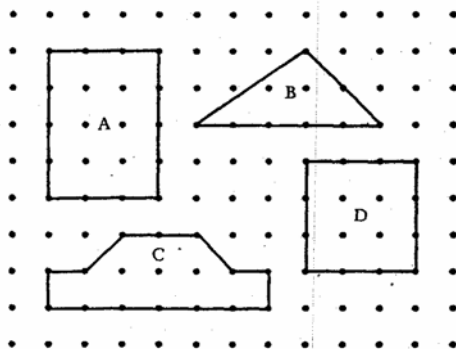
10. a) A map ratio is 1 : 4,000. What actual distance, in metres, is represented by 1 cm on the map?

- b) Use the information given in the diagram to work out the length of BC.



(6 marks)

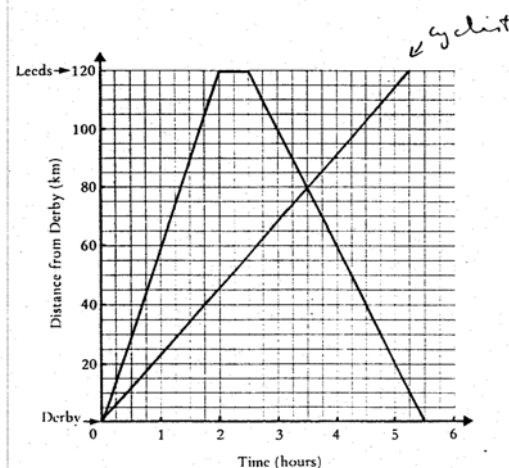
11. a) Find the area of each of the shapes A, B, C and D.



- b) Calculate the value of x in the equation $\frac{8}{x} = \cos 60^\circ$.

(8 marks)

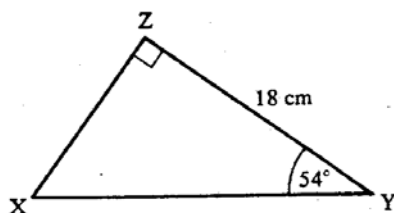
12. The graph shows the journey of a lorry from town A to town B and back. It also shows the journey of a cyclist from town A to town B.



- What is the distance between the two towns?
- How long does the lorry take for the whole journey?
- For how long did the lorry driver stop at town B?
- What is the speed of the lorry travelling from B to A?
- When and where do the lorry and cyclist meet?

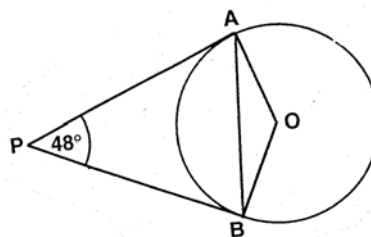
(8 marks)

13. a)



In triangle XYZ, $YZ = 18\text{cm}$, $\angle XYZ = 54^\circ$ and $\angle XZY$ is a right angle. Calculate the length of XZ giving your answer correct to 1 decimal place.

- b) PA and PB are tangents from the point P to the circle with centre O. If angle $APB = 48^\circ$, find angles PAB and BAO.



(8 marks)

14. a) What does the equation $2x + 3y + 4 = 0$ represent?
- Make y the subject of the equation.
 - What is its gradient?
 - Write down the intercept on the Y - axis.
 - Work out the value of y when $x = 2$.
 - Where does it cut on the X - axis?

(8 marks)

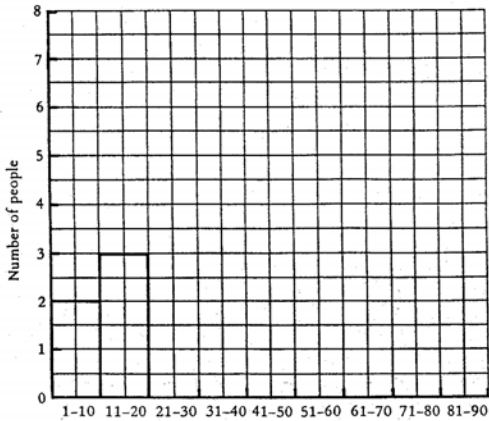
15. In a village the ages of 40 people chosen at random were noted. This information is given below:

62	32	87	62	48	9	42	53	41	24
29	47	38	21	54	72	52	3	73	37
48	49	78	67	33	64	39	12	45	69
68	79	45	65	59	15	84	38	55	18

a) Complete the following table:

Age	Tally	Frequency
1 – 10		
11 – 20		
21 – 30		
31 – 40		
41 – 50		
51 – 60		
61 – 70		
71 – 80		
81 – 90		
Total		

- b) How many people were aged 21 to 40?
- c) Complete the given bar chart .
- d) What fraction of the population was over 60?



(8 marks)