# PRIMARY LEAVING EXAMINATION
## 2012

# MATHEMATICS

*Time Allowed: 2 hours 30 minutes*

**Index No.**

**Candidate's Name** ...............................................................................

**Candidate's Signature** ...........................................................................

**School Name** ......................................................................................

**District Name** .....................................................................................

## Read the following instructions carefully:

1. The paper has **two** sections: **A** and **B**.

2. **All** the working for both sections **A** and **B** must be shown in the spaces provided.

3. **All** working must be done using a blue or black ball-point pen or fountain pen. Diagrams should be drawn in pencil.

4. No calculators are allowed in the examination room.

5. Unnecessary changes of work may lead to loss of marks.

6. Any handwriting that cannot easily be read may lead to loss of marks.

7. Do **not** fill anything in the boxes indicated: **"For Examiners' Use Only"** and those inside the question paper.

| FOR EXAMINERS' USE ONLY | | |
|---|---|---|
| Qn. No. | MARKS | EXRS' NO. |
| 1 – 10 | | |
| 11 – 20 | | |
| 21 – 22 | | |
| 23 – 24 | | |
| 25 – 26 | | |
| 27– 28 | | |
| 29 – 30 | | |
| 31 – 32 | | |
| Total | | |

**Turn Over**

*Answer **all** questions in this section.*
*Questions **1** to **20** carry **two** marks each.*

1. Work out:   $87 - 65$
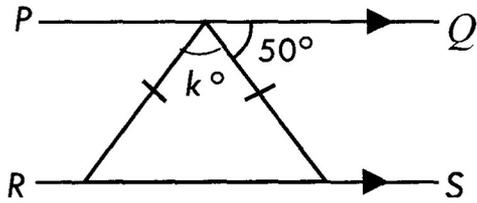
2. Write in words: 55,001

   .......................................................................................................

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3. Simplify:   $^-6 - {^-4}$

4. Solve:   $\frac{2}{5}m = 4$

5. Given that set $Q = \{$ all prime numbers less than 10 $\}$, find $n(Q)$.

6. Work out:   $\frac{3}{4} \div 1\frac{1}{2}$

**7.** In the diagram below, find the value of $k$.



**8.** Find the value of $2^4 + 3^0$

**9.** A debate which took $1\frac{1}{4}$ hours ended at 4:10 p.m. What time did it start ?

**10.** Find the Greatest Common Factor (GCF) of 18 and 24.
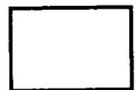
**11.** Using a pair of compasses, a ruler and a pencil only, construct an angle of 120° in the space provided below.

**12.** Write 0.08 as a fraction in its simplest form.

**13.** The perimeter of the rectangle below is 36 m. Find its width if the length is 12 m.



12 m
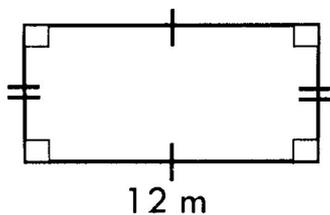
**14.** Work out:  2 6 8
$$\underline{\times\ 2\ 5}$$

**15.** Given that $k = 2$ and $p = -3$, find the value of $3k + 2p$.

**16.** A gate keeper's salary was increased from Sh 50,000 to Sh 60,000. Find the percentage increase.

*The table below shows the goals scored by some teams in a netball competition.* **Use it to answer question 17.**

| Goals | 25 | 20 | 15 | 12 | 30 | 10 |
|---|---|---|---|---|---|---|
| **Number of teams** | 2 | 1 | 3 | 4 | 3 | 5 |

**17.** How many teams scored less than 20 goals?

**Turn Over**

**18.** Find the square root of $3\frac{1}{16}$ .

**19.** The number of subsets in set **A** is 16. How many elements are in set **A** ?

**20.** A bus covered a distance of 280 km in 3 hours and 30 minutes. What was its average speed ?

6
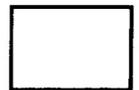
**SECTION B: 60 MARKS**

*Answer all questions in this section.*

*Marks for each question are indicated in the brackets.*

**21.** In a class of 60 pupils, 30 like English (*E*), *y* like Mathematics (*M*) only, 10 like both subjects and 5 do not like any of the two subjects.

(a)  Use the information given above to complete the Venn diagram below.

(*02 marks*)

$n(\varepsilon)= 60$
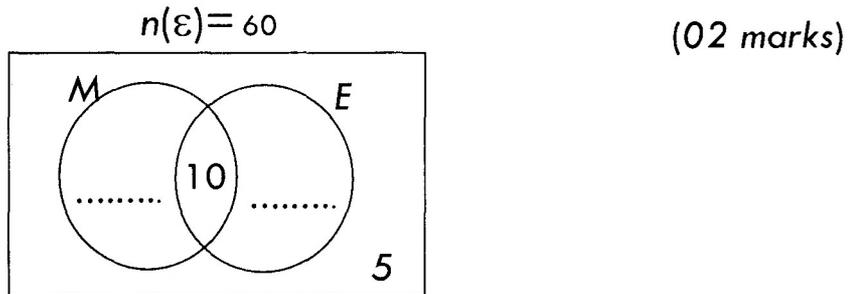
(b)  Find the value of *y* .                     (*02 marks*)

(c)  How many pupils like Mathematics altogether ?        (*01 mark*)

**22.** (a) Using a ruler, a pair of compasses and a pencil only, construct
a triangle *ABC* where line *AB* = 6.4 cm, angle *CAB* = 60°
and angle *ABC* = 75°. *(05 marks)*

(b) Measure the length *BC* ............................................. *(01 mark)*

$$\boxed{\phantom{xxxxx}}$$

**23.** Asiimwe bought the following items from a shop:

    (i) 3 bars of soap at Sh 1,200 per bar.

    (ii) $1\frac{1}{2}$ kg of sugar at Sh 3,000 per kg.

    (iii) $\frac{1}{2}$ kg of salt at Sh 1,000 per kg.

(a) What was his total expenditure ? *(04 marks)*

(b)   If he had Sh 10,000, how much money did he remain with ?

(01 mark)

**24.**   A cylindrical tin of radius 7 cm contains 3080 cm³ of cooking oil.

(a)   Joan used 2156 cm³ of the cooking oil. What is the height of the cooking oil remaining in the tin ? (Take $\pi = \frac{22}{7}$)

(03 marks)

(b)   Joan poured the remaining cooking oil into a rectangular tin with base area 77 cm². What was the height of the oil in the tin ?

(02 marks)

**Turn Over**
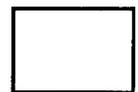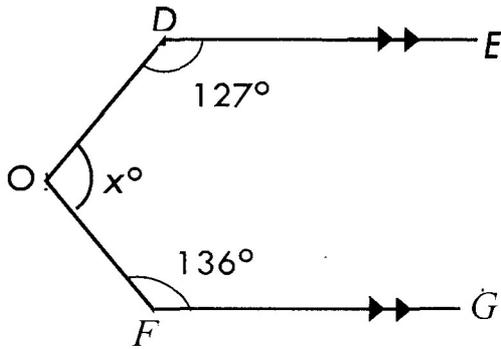
**25.** (a)  Solve: $14p + 4 = 11$.

(02 marks)

(b)  Solve the inequality:  $3x + 4 > x + 8$.

(02 marks)

**26.** (a)  The interior angle of a regular polygon is $36°$ more than its exterior angle.  What is the size of each exterior angle?
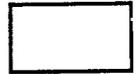
(02 marks)

(b)    In the figure below, *DE* is parallel to $FG$, angle *ODE* = 127°
and angle $OFG$ = 136°.  Calculate the size of angle *x*.

D

127°

O    )x°

136°

F

E

G
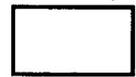
27.   In Jumbo primary school, $\frac{1}{4}$ of the pupils in P7 like Science, $\frac{2}{3}$ of
the remainder like Mathematics. The rest of the pupils like English.
If those who like English are 33, find the total number of pupils in P7.

28.   (a)   Change $13_{ten}$ to base two.

(b)  Find the number which has been expanded below.

$(5 \times 10^5) + (4 \times 10^3) + (9 \times 10^0)$ .  (03 marks)

29.  Carefully study the diagram below and use it to answer the questions that follow.  Line $AB = OC$ and $AO = OD = BC$.
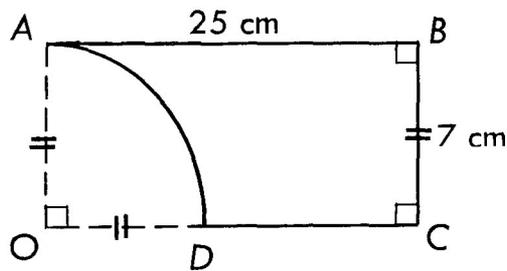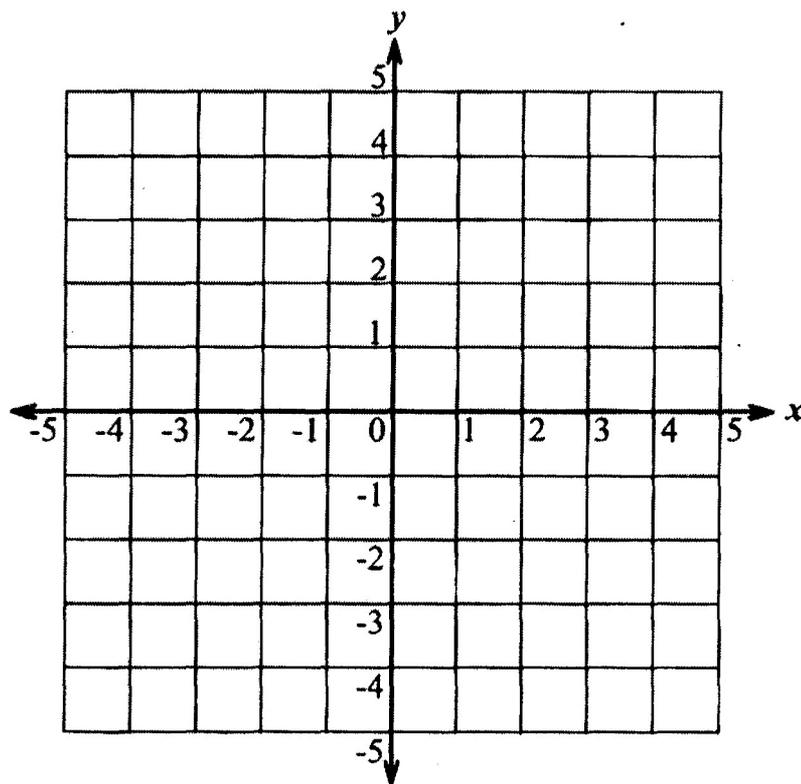


(a)  Find the length of arc AD.  (Take $\pi = \frac{22}{7}$)  (02 marks)

(b)     Work out the perimeter of *ABCDA*.

(*03 marks*)

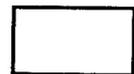**30.**   (a)   On the graph below, plot the points $A(^-2, ^+3)$, $B(^+5, ^+3)$, $C(^-2, ^-1)$ and $D(^+1, ^-1)$.

(*04 marks*)



(b)     Join *A* to *B*,   *B* to *D*,   *D* to *C* and   *C* to *A*.

(*01 mark*)

(c)     Name the quadrilateral formed  after  joining the  points.

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(*01 mark*)

**Turn Over**

**31.** A man's salary was increased by 30% to Sh 312,000 per month.

(a) What was the man's monthly salary before the increment ?

*(02 marks)*

(b) If 5% of his new salary is subtracted as tax, what is his final salary ?

*(03 marks)*

**32.** Okidi left Kampala at 7.00 a.m. driving a lorry at an average speed of 40 km/hr for 2 hours to Jinja. He rested for one hour at Jinja, then continued to Tororo at an average speed of 50 km/hr for another 2 hours.

(a) Use the above information to show Okidi's journey on the graph below. *(03 marks)*



Distance in km.

Time in hours
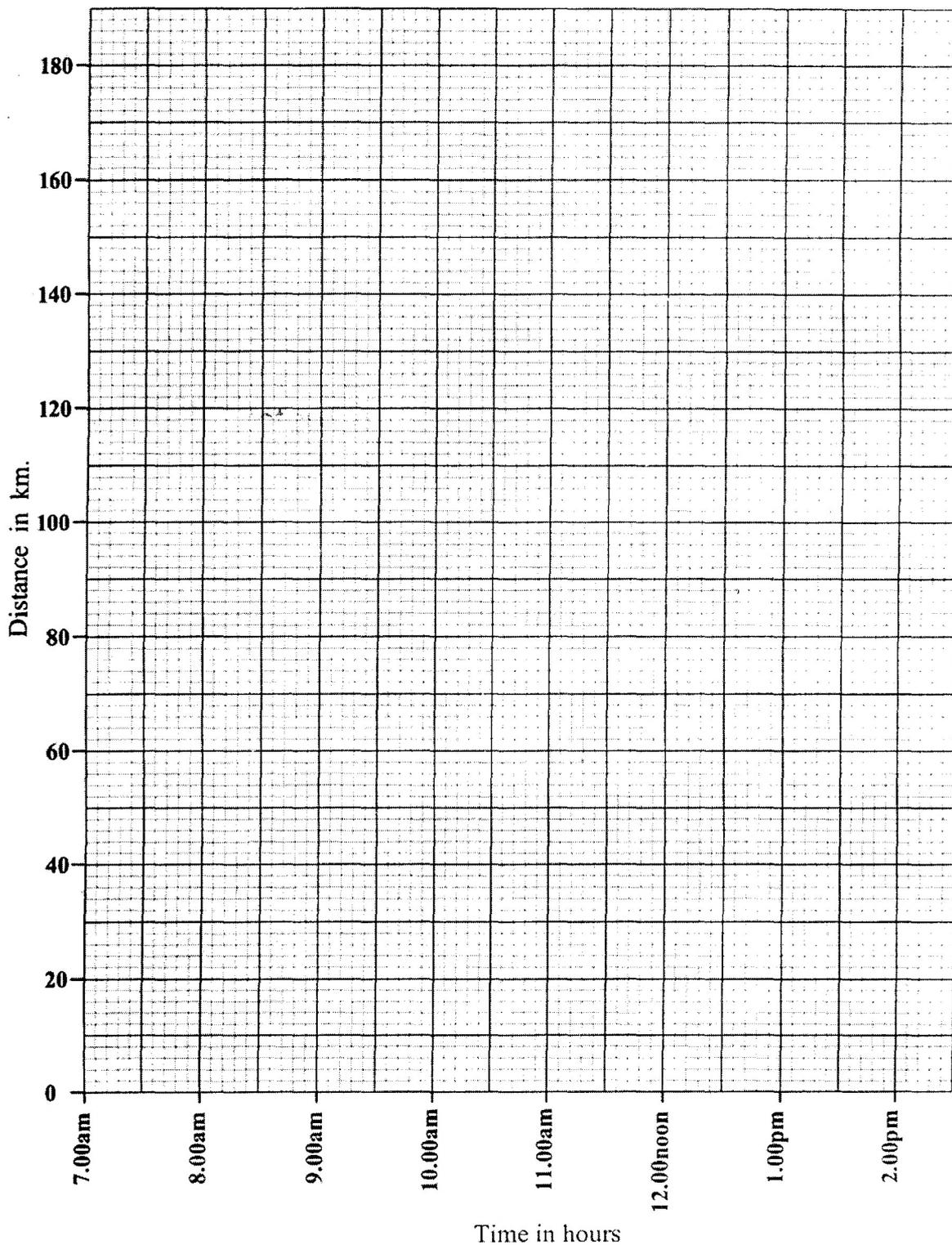
(b)    Calculate Okidi's average speed for the whole journey.

(*02 marks*)

**END.**