Mathematics

1   Read these instructions carefully.

2   **DO NOT** turn this page before you are told. Your teacher will tell you when to turn this page to begin the questions.

3   There are **60** questions in this **MATHEMATICS PAPER**. You will be given **EXACTLY 90 MINUTES** to do the questions.

4   For each question, four answers are given, but only one of the four is right. Work out which is the **BEST** answer. Then, on your **ANSWER SHEET**, mark the box completely by shading the answer space of the letter of your choice. If you had chosen answer **D** for a question, you would show it like this:-

                     A   B   C   ■

5   You must **SHADE** your answer spaces **COMPLETELY** and **DARKLY** using an **HB** pencil. If you have to change your answer, you must rub out the shading **VERY NEATLY** before shading the new one. **USE A CLEAN RUBBER**.

6   When you have finished one page, go straight on without waiting to be told. If you have time left at the end of the question paper, use it to check your work carefully.

7   Look at your **ANSWER SHEET**. On the top left hand side are boxes which should have Examination Year, your School Number and Examination Number. It should also say **Subject 3 Paper 1.**

8   Look at your **ANSWER SHEET** again. At the bottom left hand side, it should have your Surname, Forename, Subject – **Mathematics,** Name of Primary School and your Secondary School of choice.

9   **PUT UP** YOUR **HAND NOW IF:**   You have any question.

                                                      You have the wrong answer sheet.

You will **NOT** be able to ask questions once the examination has begun.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD.
USE ONLY AN HB ✏ PENCIL FOR YOUR ANSWERS.

1   Find the next number in the sequence 23, 20, 17, 14, …

    A   11.

    B   9.

    C   8.

    D   7.

2   Add 251 279 to 384 945.

    A   636 114

    B   636 124

    C   636 214

    D   636 224

3   Express 0.45 as a percentage.

    A   45%

    B   55%

    C   65%

    D   75%

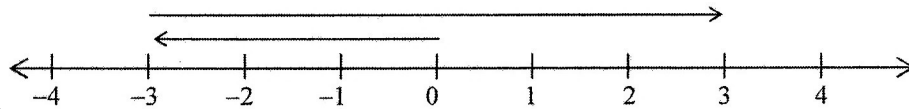4   Which of the lines on the diagram is a line of symmetry?
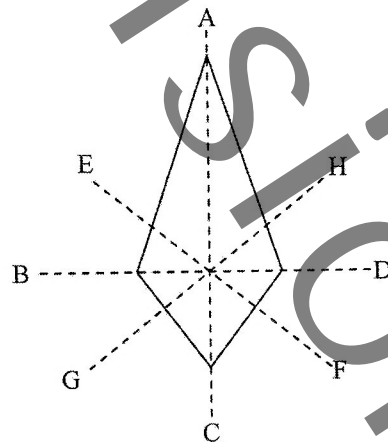
    A   GH

    B   EF

    C   BD

    D   AC

5   823 146 – 371 502 =

    A   451 644

    B   452 644

    C   551 644

    D   552 644

6 The number line below shows …

    A $-3 + (+5) = +3$.

    B $-3 + (+6) = +3$.

    C $+3 + (-6) = +3$.

    D $+3 + (-5) = +3$.

7 In Roman numerals, the number 1 643 can be written as …

    A   MDCXLIV.

    B   MCDXLVI.

    C   MDCXLIII.

    D   MDCLVI.

8 The numbers 3, 6, 9, 12, 15, 18, 21 and 24 are multiples of …

    A   3.

    B   6.

    C   9.

    D   12.

9 5^3 can also be written as …

    A $3 \times 3 \times 3 \times 3 \times 3$.

    B $3 + 3 + 3 + 3 + 3$.

    C $5 + 5 + 5$.

    D $5 \times 5 \times 5$.

10 Express the ratio 5kg to 25kg in its lowest terms.

    A   5 to 1

    B   1 to 5

    C   4 to 1

    D   1 to 4

11 A company bought 759 pockets of cement in one shop and 456 pockets in another shop. How many pockets of cement did the company buy altogether?

    A   1 215

    B   1 205

    C   1 115

    D   1 105

12 $1.41 + 5.97 + 15.048 =$

    A   21.328

    B   21.428

    C   22.328

    D   22.428

13 If $24 + x \leq 30$, the value of x is ...

A $\quad x \leq 6.$

B $\quad x \leq 24.$

C $\quad x \leq 30.$

D $\quad x \leq 54.$

14 What is $\dfrac{4}{5}$ of $\dfrac{2}{3}$?

A $\quad \dfrac{22}{15}$

B $\quad \dfrac{6}{5}$

C $\quad \dfrac{8}{15}$

D $\quad \dfrac{2}{15}$

15 Machipisa sold all his goods at a discount of 10%. What was the discount on a dress which he was selling at K800.00?

A $\quad$ K50.00

B $\quad$ K60.00

C $\quad$ K70.00

D $\quad$ K80.00

16 Musonda had 21 eggs in a box. If y eggs are broken and 17 eggs are not. Find the value of y.

A $\quad$ 3

B $\quad$ 4

C $\quad$ 17

D $\quad$ 38

17 Find the Highest Common Factor of 12 and 18.

A $\quad$ 2

B $\quad$ 3

C $\quad$ 6

D $\quad$ 9

18 Find the mode of 14, 10, 10, 7, 8, 14, 16, 19, 10 and 13.

A $\quad$ 7

B $\quad$ 10

C $\quad$ 14

D $\quad$ 19

19 $3\dfrac{2}{5} + \dfrac{1}{5} =$

     A $1\dfrac{2}{5}$

     B $1\dfrac{4}{5}$

     C $3\dfrac{1}{5}$

     D $3\dfrac{3}{5}$

20   A bicycle was bought at K750.00 and was later sold at K645.00.
Find the loss that was made.

     A   K1 395.00

     B   K645.00

     C   K105.00

     D   K100.00

21   If Set A = {2, 3, 5, 7, 9} and Set B = {1, 2, 3, 5}, list A ∩ B.

     A   {2, 3}

     B   {2, 3, 5}

     C   {1, 2, 3}

     D   {1, 2, 3, 5, 7, 9}

22   Mutale had $28. He bought a shirt and a pair of shoes and his change was $3. How much did he spend?

     A $84

     B $31

     C $28

     D $25

23 $\dfrac{2}{3} - \dfrac{1}{8} =$

     A $\dfrac{13}{24}$

     B $\dfrac{15}{24}$

     C $\dfrac{17}{24}$

     D $\dfrac{19}{24}$

24   A regular polygon with four sides is called a …

    A   trapezium.

    B   square.

    C   rhombus.

    D   parallelogram.

25   Matemba bought 16.52kg of beef. Write the mass of beef to one decimal place.

    A   17.0kg

    B   16.6kg

    C   16.5kg

    D   16.0kg

26   Find the mean of 90, 80 and 40.

    A   40

    B   70

    C   80

    D   90

27   Look at the number line below.
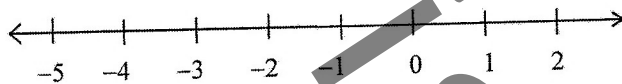
    Which of the numbers are greater than -1?

    A   0, 1, 2

    B $-2, -3, -4$

    C $-1, 0, 1$

    D $-2, -1, 0$

28 $1211_{five} + 2344_{five} =$

    A $4\ 610_{five}$

    B $4\ 110_{five}$

    C $4\ 000_{five}$

    D $1\ 610_{five}$

29   The Lowest Common Multiple of 8, 9 and 12 is …

    A   72.

    B   56.

    C   48.

    D   24.

30 $897 \div 23 =$

    A   1 120

    B   874

    C   309

    D   39

31 Mubita covered a distance of 280km in 4 hours. At what speed was he driving?

A   70km/h

B   276km/h

C   285km/h

D   1 120 km/h

32 Arrange the Roman numerals below from the smallest to the biggest.

XV,   LV,   XI

A   LV,   XV,   XI

B   LV,   XI,   XV

C   XI,   XV,   LV

D   XV,   XI,   LV

33 Find the volume of a cuboid of length 7cm, breadth 5cm and height 3cm.

A $35cm^3$

B $36cm^3$

C $95cm^3$

D $105cm^3$

34 If 2 shirts cost K150.00, how much will 12 shirts of the same type cost?

A   K900.00

B   K450.00

C   K150.00

D   K75.00

35 The bar chart below shows the production of maize at a farm from 2005 to 2010.
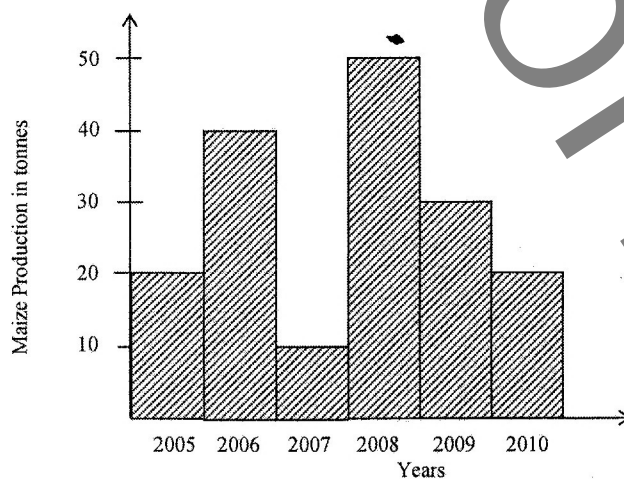
What is the difference between the tonnes of maize produced in 2007 and 2008?

A   10 tonnes

B   40 tonnes

C   50 tonnes

D   60 tonnes

36   Chipo had K200.00. She bought a dress at K70.00 and shoes at K60.00. How much money did she remain with?

    A   K140.00

    B   K130.00

    C   K70.00

    D   K10.00

37   Wezi had 40 oranges and he sold $\frac{3}{4}$ of them. How many oranges did he sell?

    A   10

    B   30

    C   60

    D   120

38    $1.97 \times 2.4 =$

    A   472.8

    B   47.28

    C   4.728

    D   0.4728

39   Look at the Venn diagram below.
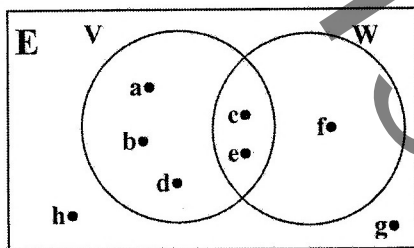
The set $V \cup W$ is …

    A   {c, e}.

    B   {c, e, f}.

    C   {a, b, c, d, e, f}.

    D   {a, b, c, d, e, f, g, h}.

40   Find 40% of 200.

    A   90

    B   160

    C   500

    D   8 000

41   An amount of K360.00 was shared among three children in the ratio 2 to 3 to 4. How much was the smallest share?

    A   K40.00

    B   K80.00

    C   K120.00

    D   K160.00

42 Convert 102_{five} to base 10.

    A   10

    B   12

    C   17

    D   27

43 The angle marked B in the triangle below is called …
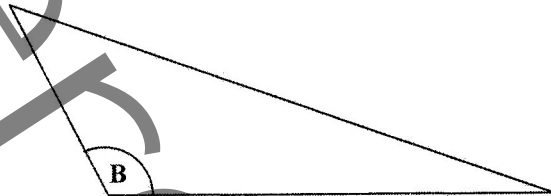
    A   an acute angle.

    B   a right angle.

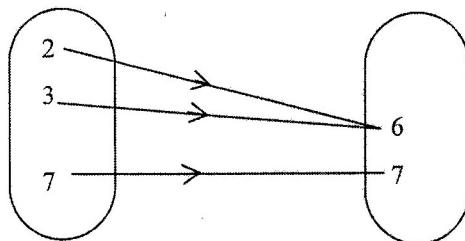   **C**   an obtuse angle.

    D   straight angle.

44 $559 \times 63 =$

    A   34 117

    B   34 217

    C   35 117

    D   35 217

45 Express 16% as a decimal.

    A   16.0

    B   1.6

    C   0.16

    D   0.016

46 The mapping below is called a …

   **A**   one-to-one mapping.

    B   one-to-many mapping.

    C   many-to-one mapping.

    D   many-to-many mapping.

47 A farmer planted cabbages in 9 rows. Each row had 108 cabbages. How many cabbages were planted altogether?

A   972

B   117

C   99

D   12

48 13.5 – 7.82 =

A   6.78

B   6.68

C   5.78

D   5.68

49 Convert 73 to a base 8 number.

A 910_{eight}

B 112_{eight}

C 111_{eight}

D 110_{eight}

50 How many faces does a cube have?

A   8

B   6

C   4

D   2

51 A chitenge material of length 10.4m is cut into 4 equal pieces. Find the length of each piece.

A   14.8m

B   10.6m

C   2.6m

D   2.1m

52 Find the total length of the edges of the cube below.
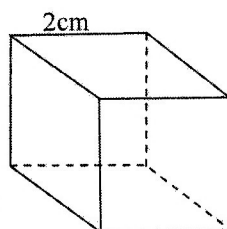
A   32cm

B   24cm

C   18cm

D   16cm

53 3 335 to the nearest hundred is …

A   3 340.

B   3 330.

C   3 300.

D   3 000.

54 Convert $1 350 to Zambian Kwacha, given that the exchange rate is $1 = K8.50.

    A   K1 341.50

    B   K1 358.50

    C   K10 475.00

    D   K11 475.00

55 If 15% of a class of 40 learners go to school by bus, how many learners in the class use a bus?

    A   6

    B   15

    C   25

    D   34

56 Calculate simple interest on K20 000.00 invested for 3 years at 5% per annum.

    A   K30 000.00

    B   K3 000.00

    C   k300.00

    D   K30.00

57 Find the value of 4^2.

    A   2

    B   6

    C   8

    D   16

58 Set B = {a, b, c}. How many subsets does Set B have?

    A   8

    B   7

    C   6

    D   3

59 Using $\pi = 3.14$, calculate the area of a circle of radius 4cm.

    A   12.46cm

    B   12.56cm

    C   25.12cm

    D   50.24cm

60 Find the area of the triangle below.
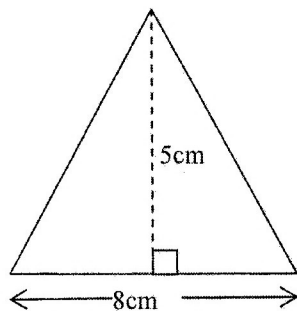
    A   40cm^2

    B   20cm^2

    C   13cm^2

    D   10cm^2

STOP! PLEASE CHECK ALL YOUR WORK CAREFULLY