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# Mathematics

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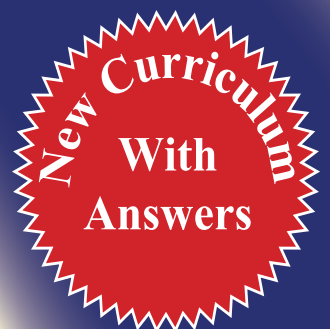
Grade

7

Revision  
Guide



Passmore Moyo  
Evelyn Maturure



*Plus One | Serious Revision*

# Mathematics

## Grade 7 Revision Guide (with answers)

Passmore Moyo

Evelyn Maturure

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## INTRODUCTION

Dear learner. I congratulate you today. You are now in your final year of primary education. The journey you have walked educationally is pleasing. I congratulate you for holding this resourceful book in your hands.

This book is indeed an important tool that you will use to hammer and soften your grade seven Mathematics examinations. The book has been written by an experienced grade seven teacher. The author also contributed actively in the design and development of the New Curriculum that gave birth to the new Mathematics syllabus. The teacher is much active in the implementation of the same curriculum. The New Curriculum has brought continuous assessment where all the exercises you write on daily basis shall be included in your final mark. This book is undoubtedly one of the best tools that can help you to overcome that troublesome Mathematics assessment.

The book contains the aims of Mathematics syllabus which shall be presented in brief followed by the syllabus objectives. The author will brief you on the Mathematics topics as given in the grades 3-7 syllabuses. The summative assessment shall be given while highlighting key information on how your examinations are set. A skills weighting table which spells out the skills to be tested, percentage marks for continuous assessment, percentage marks for the examinations and percentage weighting for each skill will be presented.

You will also be given a specification grid for examinations which gives you information on the number of questions to be set for each skill under each topic. When you revise your work do not go for easy questions only leaving out the challenging ones. Your examination will never come with easy questions only. All the skills will be tested. The four skills tested in Mathematics are *knowledge, routine manipulation, understanding and application and problem solving*.

### Word to the facilitator

This book has been designed in a way that it is usable by the learner with less supervision from the facilitator. All that you need to do is to facilitate the learning process. Guide learners to create their own knowledge. Clear instructions to the learner have been given in the book.

### Strengths of this publication

**This book is a useful learning resource because it helps learners to:**

- know the nature of the Mathematics examinations they will write at the end of the course.
- prepare for the end of the year summative examinations equipping them with all the skills tested in the Mathematics learning area.
- have an awareness of the syllabus requirements in order to study in line with the examining board's requirements.
- study independently gaining problem-solving skills.
- apply mathematical concepts in their day to day life.
- gain numeracy and problem-solving skills for use in life.

## Mathematics topics

Mathematics has four main topics that are divided into sub-topics. The topics and sub-topics are as follows:

### 1. Number

- Whole numbers
- Numeration systems (Roman and Arabic numerals)
- Proper fractions
- Mixed numbers
- Decimal numbers
- Percentages

### 2. Operations

- Addition of whole numbers
- Subtraction of whole numbers
- Addition and subtraction of proper fractions
- Addition and subtraction of mixed numbers.
- Addition and subtraction of decimals.
- Multiplication of whole numbers.
- Division of whole numbers.
- Multiplication and division of decimals.
- Multiplication and division of proper fractions and mixed numbers.
- Combined operations.
- Financial transactions.
- Proportion, ratio and scale

### 3. Measures

- Money
- Mass (from gram up to a tonne)
- Length (using standard units up to kilometre and non-standard units.)
- Rate
- Area
- Volume and capacity (up to cubic metres)
- Direction, angles and lines
- Shapes

### 4. Relationships

- Data handling

# Unit

# 1

## NUMBER (WHOLE)

### General hints on Whole numbers

At grade seven your number range is 0 up to 10 000 000. This means that you need to know all the numbers in that range. You should be in a position to identify odd numbers, even numbers, prime numbers and prime factors within that range. You also need to know how to read and write the numbers in that range in words and in numerals.

To understand numbers, you need to know the place value of digits in numbers. For example, the last digit in any whole number represents units. The second digit from the last represents Tens. From Tens going to your left you proceed to Hundreds, Thousands, Ten thousands, Hundred thousand, Millions and lastly Ten million.

Look at this table that can help you to understand numbers:

		Millions							
	T M	M	HTh	TTh	Th	H	T	U	
Row 1								2	Only one digit shown under unit. The number is 2 (two).
Row 2							2	2	Two numbers shown under units and tens. this is 2 tens and 2 units. Thus 22 (twenty-two).
Row 3						2	2	2	The row shows 2 hundreds, 2 tens and 2 units. Thus two hundred and twenty-two.
Row 4					2	2	2	2	There are 2 thousands, 2 hundreds, 2 tens and 2 units. Two thousand two hundred and twenty-two.
Row 5				2	2	2	2	2	There are 22 thousands, 2 hundreds, 2 tens and 2 units. Thus twenty-two thousand two hundred and twenty-two.
Row 6			2	2	2	2	2	2	There are 222 thousands here so the row shows, 2 hundred and twenty-two thousand, two hundred and twenty-two.
Row 7		2	2	2	2	2	2	2	Here there are 2 million and 222 thousands. The number is 2 million, two hundred and twenty two thousand, two hundred and twenty-two.
Row 8	2	2	2	2	2	2	2	2	Here there are 22 millions, 222 thousands. The number is read as twenty-two million, two hundred and twenty-two thousand, two hundred and twenty-two.
Row 9		9	3	4	5	6	7	8	There are 9 millions, 345 thousands, 6 hundreds, 7 tens and 8 units. The number is nine million, three hundred and forty five thousand six hundred and seventy-eight.

Under millions there is 2, under thousands there is 147, under hundreds there is 6, under tens there is 8 and under units there is 2. We can therefore write the number in words and say two million, one hundred and forty-seven thousand, six hundred and eighty-two.

### Example 1

Write the numbers in words shown by the table below.

	Millions	Thousands			Hundreds	Tens	Units
(i)	4	9	7	1	3	2	5
(ii)	5	3	1	2	9	7	4
(iii)	6	2	8	1	1	2	2

### Expected answers

- (i) Four million nine hundred and seventy-one thousand three hundred and twenty-five.
- (ii) Five million three hundred and twelve thousand nine hundred and seventy-four.
- (iii) Six million two hundred and eighty-one thousand one hundred and twenty-two.

### Example 2

Write these numbers in numerals. Remember to space between Thousands and Tens and between Millions and Thousands.

- (i) Four million five hundred and seventy-three thousand four hundred and twelve.
- (ii) Six million six hundred and thirty thousand six hundred and forty-six.
- (iii) Fifteen million and sixty-four.

### Expected answers

- (i) 4 573 412
- (ii) 6 630 646
- (iii) 15 000 064

### Practice 1

1. 542 written in words is □.
2. Write 16 283 in words.
3. What is 152 758 written in words?
4. Write 769 312 in words.
5. What is 5 132 412 written in words.

## 2. Place value

Each digit in a number can have the value of Millions (M), Hundred Thousand (HTh), Ten Thousand (TTh), Thousand (T), Hundred (H), Tens (T) and Units (U). You need to know the value of each digit in order to read numbers correctly.

Here is an example on the table below;

		Thousands						
Row number	M	HTh	TTh	Th	H	T	U	Number in words
(i)						4	<u>6</u>	The value of 6 is units (6)
(ii)					3	<u>7</u>	2	The value of 7 is tens (70)
(iii)			5	1	<u>4</u>	2	8	The value of 4 is hundreds (400)
(iv)	1	3	2	<u>6</u>	5	7	9	The value of 6 is thousands (6 000)
(v)	8	1	<u>4</u>	0	0	0	0	The value of 4 is tens of thousands (40 000)

## Practice 2

Find the value of the underlined digit in these numbers:

- 12 976
- 591 228
- 132 674
- 5 143 339
- 3 446 327
- 1 472 911
- 6 126 427
- 540 234
- 326 772
- 63 121 978

## 3. Writing numbers in index notation

We start by explaining what index numbers are. Look at this:

- $2^4$  we say 2 to the power of 4. The raised digit 4 is called an index. The word index means one. It is a singular. When they are two or many they are called indices.
- $4^2$  This is 4 to the power of 2. The raised digit 2 is an index.
- $3^4$  This is 3 to the power of 4. The raised digit 4 is an index.

### Reminder:

- $2^4 = 2 \times 2 \times 2 \times 2 = 16$
- $3^4 = 3 \times 3 \times 3 \times 3 = 81$

### Notes

- When any number is to the power of 1 the result is that number, for example,  $2^1 = 2$ ;  $4^1 = 4$ ;  $8^1 = 8$ ;  $5^1 = 5$ .
- Any number to the power of 0 is 1, for example,  $3^0 = 1$ ;  $5^0 = 1$ ;  $6^0 = 1$ ;  $7^0 = 1$



## Multiple Choice Practice (Paper 1)

Answer all questions by choosing the correct answer from the given options.

- 2 324 879 written in words is \_\_\_\_\_.  
A. two million three hundred and twenty-four and eight hundred and nine.  
B. two million three thousand two hundred and twenty-four and eight hundred and seventy-nine.  
C. two million three hundred and twenty-four thousand eight hundred and nine.  
D. two million three hundred and twenty-four thousand eight hundred and seventy-nine.
- Four million three hundred thousand and thirty-seven written in numerals is  $\square$ .  
A. 4 000 000 37      B. 4 000 0037      C. 4 300 037      D. 4 000 37
- Find the missing number in the sequence below.  
500 324      500 424      500 524      500 624       $\square$       500 824  
A. 500 224      B. 500 524      C. 500 724      D. 500 924
- Study the number sequence and find the missing number;  
1      2      4      8      16       $\square$       64  
A. 12      B. 32      C. 19      D. 20
- 832 121    732 121    632 121    532 121    432 121     $\square$ . The missing number is  $\square$ .  
A. 932 121      B. 332 121      C. 231 122      D. 132 121
- Who is the sixth boy in the list below?  
Sam      Sisa      Tom      Ben      Henry      Themba      Jabu      Musa  
A. Sam      B. Musa      C. Themba      D. Henry
- 43 213; 35 312; 74 013; 34 210; 90 132; 8 989; 27 006 and 81 455 written in the correct ascending order is \_\_\_\_\_.  
A. 43 213; 35 312; 74 013; 34 210; 90 132; 8 989; 27 006; 81 455  
B. 8 989; 27 006; 34 210; 43 213; 35 312; 74 013; 90 132; 81 455  
C. 8 989; 27 006; 34 210; 35 312; 43 213; 74 013; 81 455; 90 132;  
D. 90 132; 81 455; 74 013; 43 213; 35 312; 34 210; 27 006; 8 989;
- What is the value of the underlined digit in 275 384?  
A. 7      B. 70      C. 700      D. 70 000
- What is the value of  $4^3$ ?  
A. 12      B. 54      C. 60      D. 64
- Which of the following statements is true?  
A.  $27\,531 = (2 \times 10^4) + (7 \times 10^3) + (5 \times 10^2) + (3 \times 10^1) + (1 \times 10^0)$   
B.  $27\,531 = (2 \times 10^5) + (7 \times 10^4) + (5 \times 10^3) + (3 \times 10^2) + (1 \times 10^1)$   
C.  $27\,531 = (2 \times 10^3) + (7 \times 10^2) + (5 \times 10^1) + (3 \times 10^1) + (1 \times 10^0)$   
D.  $27\,531 = (2 \times 10^6) + (7 \times 10^5) + (5 \times 10^4) + (3 \times 10^3) + (1 \times 10^2)$
- What number is represented by the picture below?

H	T	U

- A. 999      B. 304      C. 403      D. 695

## Structured questions (Paper 2)

- (a) Answer all the questions.  
 (b) If working is needed for any question it must be shown.  
 (c) Omission of essential working may result in loss of marks.

1. Write the numbers below in words.

- (a) 176  
 (b) 657 907  
 (c) 1 000 634

2. Write these numbers in numerals.

- (a) Three hundred and seven thousand and fifteen.  
 (b) Two million, three hundred thousand and ninety-six.  
 (c) Four hundred and twenty-six thousand, eight hundred and seventy-nine.

3. Arrange these numbers in correct descending order.

231 235;      76 213;      32 980;      9 324 122;      60 600;      55 891

4. Give any 3 square numbers.

5. Complete these number sequences by filling in the missing number.

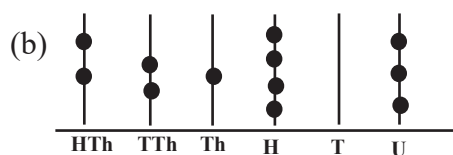
(a) 213 543      313 544      413 545      513 546      □

(b) 13      26      39      52      □

6. What number is shown by the picture below?

(a)

TTh	Th	H	T	U



7. State the value of the underlined digits in these numbers.

- (a) 986 346  
 (b) 89 397  
 (c) 9 786 394  
 (d) 1 324 989

8. Expand the following numbers:

- (a) 245  
 (b) 123 747  
 (c) 7 392 458

9. What is the value of the following?

- (a)  $3^3$   
 (b)  $10^4$   
 (c)  $5^3$

10.  $657 = (6 \times 10^2) + (5 \times \square) + (7 \times \square)$

### 1. Rounding off numbers

Numbers can be rounded off to the nearest 10; 100; 1 000; 10 000; 100 000; 1 000 000. You need to know that:

- Tens include 10; 20; 30; 40; 50; 60; 70; 80; 90; 100; 110; 120; 130; 140
- Hundreds are 100; 200; 300; 400; 500; 600; 700; 800; 900; 1 000; 1 100; 1 200
- Thousands are 1 000; 2 000; 3 000; 4 000; 5 000; 6 000; 7 000; 8 000
- Ten Thousands are 10 000; 20 000; 30 000; 40 000; 50 000; 60 000
- Hundred Thousands are 100 000; 200 000; 300 000; 400 000; 500 000
- Millions are 1 000 000; 2 000 000; 3 000 000; 4 000 000; 5 000 000

#### Examples

- (i) Round off 27 to the nearest 10.
- (ii) Round off 724 to the nearest 10.
- (iii) Round off 75 to the nearest 10.

#### Answers

- (i) 30
- (ii) 730
- (iii) 80

Numbers can also be rounded off to the nearest 100; 1 000; 10 000; 100 000 or 1 000 000. What is important is for you to identify the position of a number to be rounded off in an imaginary number line then you round off the number.

#### Examples

- (i) Round off 532 to the nearest 10.
- (ii) Round off 15 289 to the nearest 10.
- (iii) Round off 741 153 to the nearest 100.
- (iv) Round off 87 899 to the nearest 1 000.
- (v) Round off 287 423 to the nearest 100 000.

< greater than

= equal to

Read these true statements:

- $4 < 7$  (It means 4 is less than 7.)
- $66 > 9$  (It means 66 is greater than 9.)
- $60 = 35 + 25$  (It means that the value of 35 added to 25 is equal to the value of 60.)

### Examples

In the following statements replace  $\square$  with  $<$ ,  $>$  or  $=$  sign to make the statements correct.

(i)  $213 \square 321$

(ii)  $423 \square 234$

(iii)  $432 + 168 \square 440 + 160$

(iv)  $95 \square 354$

### Answers

(i)  $213 < 321$

(ii)  $423 > 234$

(iii)  $432 + 168 = 440 + 160$

(iv)  $95 < 354$

### Practice 3

In the following statements replace  $\square$  with  $<$ ,  $>$  or  $=$  to make each statement correct.

1.  $543 \square 701$
2.  $199 \square 654$
3.  $9\,989 \square 22\,132$
4.  $332 \square 800$
5.  $9\,001 \square 8\,100$
6.  $23 \times 2 \square 40 + 5$

### Multiple Choice Practice (Paper 1)

Answer all questions by choosing the correct answer from the given options.

1. 87 rounded off to the nearest 10 is  $\square$ .  
A. 80                      B. 86                      C. 88                      D. 90
2. 472 rounded off to the nearest 10 is  $\square$ .  
A. 470                      B. 480                      C. 490                      D. 495
3. 9 437 rounded off to the nearest 10 is  $\square$ .  
A. 40                      B. 50                      C. 9 440                      D. 9 500
4. Round off 867 324 to the nearest 10.  
A. 767 320                      B. 867 320                      C. 867 330                      D. 967 320

**Hints on division of whole numbers**

- (a) Combined operations involve a combination of operations in one problem. You may be given a problem which includes addition, subtraction, multiplication and division skills at the same time.
- (b) It is important to read questions carefully and understand them before attempting to answer.
- (c) Be sure of which operations are involved in the question before you respond.

**1. Law of precedence in operations**

Some operations come first when we are solving problems. You learnt how these operations are used.

**Example**

Jabulani received \$13.00 from his mother and received \$23.00 from his aunt. He bought 3 exercise books at \$2.00 each. How much change was he given?

In order to solve this problem, you will need to know the total amount of money that Jabulani had. You will need to add \$13.00 and \$23.00. To calculate change you will need to know the total price of the books hence you will need to multiply \$2.00 by 3. To calculate change you will need to subtract the money used to buy books from the money that Sam had. This problem can be written as follows;  $\$13 + \$23 - \$2 \times 3 =$

**Practice 1**

Solve the following problems by collecting like terms as shown above.

1.  $53 - 35 + 94 =$
2.  $83 - 106 + 43 =$
3.  $127 + 23 - 122 + 17 =$
4.  $232 - 273 + 14 + 76 =$
5.  $143 + 37 - 34 - 13 =$
6.  $23 - 456 + 1\,998 - 25 =$
7.  $645 - 56 + 791 - 327 =$
8.  $243 - 213 + 54 - 3 =$
9.  $354 - 834 + 1\,000 =$
10.  $1\,000 - 428 + 428 =$

## Multiple Choice Practice (Paper 1)

Answer all questions by choosing the correct answer from the given options.

1.  $n + 6 = 9$ . Find the value of  $n$ .  
A. 3                      B. 4                      C. 5                      D. 6
2. What must be added to 3 468 to make it 8 314?  
A. 11 782                B. 5 435                C. 4 846                D. 2 109
3. What is the difference between the sum of 67 and 84 and the product of 13 and 20?  
A. 5 888                B. 5 628                C. 5368                D. 109
4. The sum of two numbers is 4 173. The other number is 1 989. Find the other number.  
A. 6 162                B. 2 184                C. 2 016                D. 1 426
5. What is the value of  $1 - 9 + 27$ ?  
A. 19                      B. 35                      C. 36                      D. 40
6. When the product of 3 286 and 20 is divided by 10 the result is \_\_\_\_\_.  
A. 7 520                B. 6 860                C. 6 572                D. 1 328
7.  $2\frac{1}{2} + 1\frac{1}{3} - 1\frac{1}{4} =$   
A.  $2\frac{7}{12}$                       B.  $3\frac{1}{2}$                       C.  $3\frac{3}{4}$                       D.  $4\frac{1}{2}$
8. Mrs Sibanda is driving in a 300km journey from Kadoma to Dugwi. Her car has a breakdown after 293.25km. How far is she from Dugwi?  
A. 293km                B. 201km                C. 7.75km                D. 6.75km
9. 0.3 of a shape is shaded.  $\frac{1}{2}$  of the second shape is shaded too. What is the total decimal fraction of the shaded parts of the shapes?  
A. 12.3                      B. 0.8                      C. 0.2                      D. 0.02
10.  $345 - 430 + 264 =$   
A. 179                      B. 239                      C. 349                      D. 359
11. A choir has 37 girls and 17 boys. Half of the choir is \_\_\_\_\_.  
A. 14                      B. 24                      C. 26                      D. 27
12. Find 37.5% of \$600.  
A. \$300                      B. \$225                      C. \$200                      D. \$190
13.  $1\ 000 - \frac{2}{5}$  of 250 =  
A. 900                      B. 800                      C. 700                      D. 600
14.  $4\frac{1}{2} + 3\frac{1}{4} - 4\frac{1}{3} =$   
A.  $3\frac{3}{4}$                       B.  $3\frac{1}{2}$                       C.  $3\frac{1}{4}$                       D.  $3\frac{5}{12}$
15. Mr Moyo deposited \$3 400 into his bank account. In a week's time he withdrew \$500 and deposited \$700 a few days later. How much money is in his bank account now?  
A. \$4 600                B. \$3 600                C. \$3 540                D. \$2 600
16.  $2(3) + 63 =$   
A. 90                      B. 86                      C. 69                      D. 54
17. A lady bought 25.25kg of mealie-meal on Monday. On Tuesday she received 13.75kg of mealie-meal and she gave half of the total amount of mealie-meal to her neighbour. How much mealie-meal was she left with?  
A. 39kg                      B. 19.5kg                      C. 23.5kg                      D. 15.5kg

## MEASURES (AREA, VOLUME AND CAPACITY, SHAPES, DIRECTION, ANGLES AND LINES)

### Hints on the topics

- To calculate the area of various shapes you need to know the various formulas.
- To calculate the area of a rectangle, multiply given length by width/breadth. Area of a rectangle =  $L \times W$ . The other word for width is breadth.
- To calculate the area of a triangle, multiply the Base of that triangle by the height and divide the result by 2. Area of a triangle =  $(B \times H) \div 2$  or  $\frac{1}{2}$  Base  $\times$  Height.
- To calculate the area of a square, multiply a side by a side.
- To find the area of composite shapes, break those composite shapes into squares, rectangles and triangles. Calculate the area of each broken down shape and add the answers together to get the area for the whole shape.

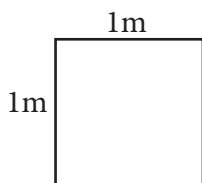
### Angles

#### To deal with angles, know that:

- The angles of a triangle add up to  $180^\circ$ .
- The angles of a rectangle and other four-sided shapes (quadrilaterals) add up to  $360^\circ$ .
- A straight line has a total of  $180^\circ$ .
- Shapes are named according to the number of sides they have. Know the names of different shapes.

### 1. Identifying units of area

You learnt about the units of length that include *mm*, *cm*, *m* and *km*. You also learnt about the units of mass that include *g*, *kg* and *tonnes*. Area also has its own units. Let us look at this square:



This square has sides that are 1 metre long. When we multiply its sides, we get  $1\text{m}^2$ . It is a one square metre written as  $1\text{m}^2$ . The units of area are square cm, square m, acres and hectares. It is important to know also the following information:

## Examples

- (i) Convert  $400\text{cm}^3$  to ml
- (ii) 3 200ml to litres
- (iii) 2.46 litres to ml

## Answers

- (i)  $400 \times 1$   
 $= 400\text{ml}$
- (ii)  $3\,200 \div 1\,000$   
 $= 3.2 \text{ litres}$
- (iii)  $2.46 \times 1\,000$   
 $= 2\,460\text{ml}$

## Practice 3

Convert these as instructed.

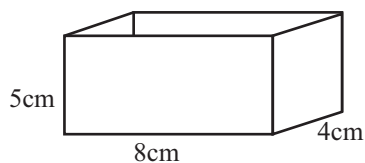
- 1. 7 litres to ml
- 2. 9 litres to ml
- 3. 800 litres to ml
- 4.  $936\text{cm}^3$  to litres
- 5. 6.96 litres to  $\text{cm}^3$
- 6. 5 684ml to litres
- 7. 5 223ml to litres.
- 8. 4 520ml to litres.
- 9. 9 023ml to litres.
- 10. 43 012ml to litres.

## 5. Measuring volume and capacity

Volume can be measured and can be calculated. The formula for calculating the volume of rectangular prisms is  $V = L \times W \times H$ .

### Example

Find the volume of this shape.



### Answer

$$\begin{aligned}\text{Volume} &= L \times W \times H \\ &= 8\text{cm} \times 4\text{cm} \times 5\text{cm} \\ &= 160\text{cm}^3\end{aligned}$$



## Practice 4

Find the volume of the rectangular prisms with these dimensions:

Complete the table below.

Number	Length	Width	Height	Volume
1.	6cm	5cm	4cm	<input type="text"/> cm <sup>3</sup>
2.	12cm	9cm	7cm	<input type="text"/> cm <sup>3</sup>
3.	8cm	5cm	6cm	<input type="text"/> cm <sup>3</sup>
4.	7cm	6cm	5cm	<input type="text"/> cm <sup>3</sup>
5.	9cm	5cm	6cm	<input type="text"/> cm <sup>3</sup>
6.	10cm	7cm	5cm	<input type="text"/> cm <sup>3</sup>
7.	9cm	5cm	6cm	<input type="text"/> cm <sup>3</sup>
8.	8cm	6cm	5cm	<input type="text"/> cm <sup>3</sup>
9.	12cm	12cm	6cm	<input type="text"/> cm <sup>3</sup>
10.	15cm	12cm	10cm	<input type="text"/> cm <sup>3</sup>

## 6. Computing capacity

### Reminder

Capacity is the ability to receive or absorb. We will be talking about the maximum amount that can be held. For example, when we are talking about the capacity of a bus we will be talking about the maximum number of passengers that a bus can carry. Capacity can be calculated.

### Examples

- A car's fuel tank holds 80 litres of fuel when full. How many times will the motorist fill his tank with 800 litres of petrol?
- A minibus has a capacity of 36 passengers. How many times will the minibus ferry 360 passengers?

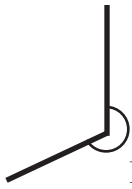
### Answers

- $800 \div 80$   
= 10 times
- $360 \div 36$   
= 10 times

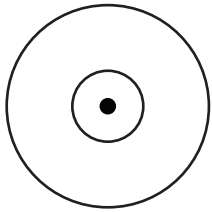
## Practice 5

Answer the following questions.

- A bus carries 76 passengers when full. The bus currently has 47 passengers on board. How many more passengers are needed to fill the bus?
- A boarding school has the capacity to enroll 238 form one learners. There are 465 applicants altogether. How many of the applicants will be turned away?
- In a meeting held in a hall, there were 490 women and 376 men. There was space to accommodate 122 more people. Find the capacity of the hall.



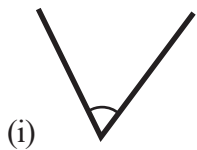
Reflex angle; it is bigger than  $180^\circ$  but smaller than  $360^\circ$



Revolution; it is  $360^\circ$  which is a complete revolution.

### Example

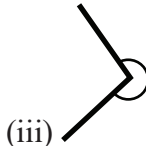
Name the angles shown by these diagrams.



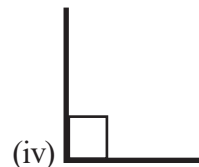
(i)



(ii)



(iii)



(iv)

### Answers

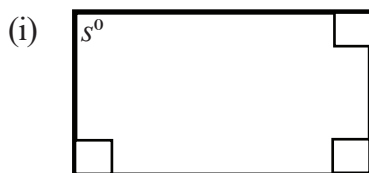
- (i) Acute angle
- (ii) Obtuse angle
- (iii) Reflex angle
- (iv) Right angle

## 12. Calculating missing angles

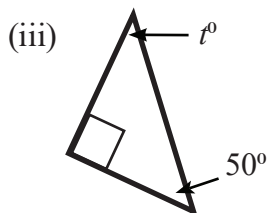
### Reminder

Know that the angles of a triangle add up to  $180^\circ$  and the interior angles of quadrilaterals add up to  $360^\circ$ :

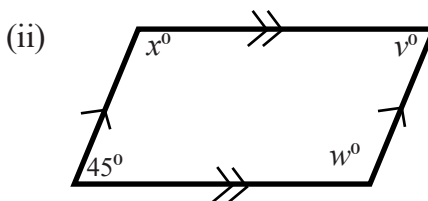
*Find the missing angles in these shapes.*



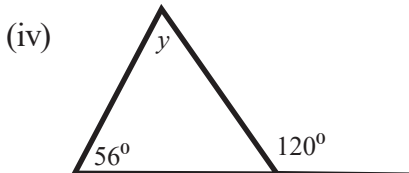
(i)



(iii)



(ii)



(iv)

### Answers

- (i) Angles =  $360^\circ - (90^\circ + 90^\circ + 90^\circ)$   
 $= 360^\circ - 270^\circ$   
 $= 90^\circ$

## Practice 8

Answer the questions below.

1. A line that runs around a circle is called a \_\_\_\_\_.
2. A diameter is double the \_\_\_\_\_.
3. What do we call a line that stretches from the circumference of a circle to the centre?
4. State the difference between a chord and a diameter.
5. The angles of a circle add up to \_\_\_\_\_.
6. A radius of a circle is 15cm. Find the length of the diameter.
7. A line that divides a rectangle into two equal triangles is called a \_\_\_\_\_.
8. The angles of a rectangle add up to \_\_\_\_\_°.
9. How many lines of symmetry does a square have?
10. How many degrees has a right angle?

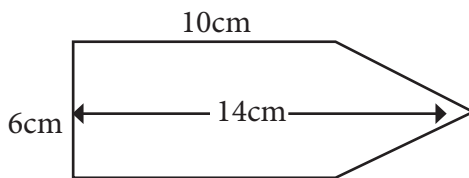
## Multiple Choice Practice (Paper 1)

Answer all the questions by choosing the correct answer from the given options.

1. A rectangle has a width of 5cm and a perimeter of 24cm. Calculate its area.  
A.  $120\text{cm}^2$       B.  $40\text{cm}^2$       C.  $35\text{cm}^2$       D.  $19\text{cm}^2$
2. What is the area of this square?



- A.  $50\text{cm}^2$       B.  $10\text{cm}^2$       C.  $5\text{cm}^2$       D.  $4\text{cm}^2$
3. What is the area of this composite shape below?

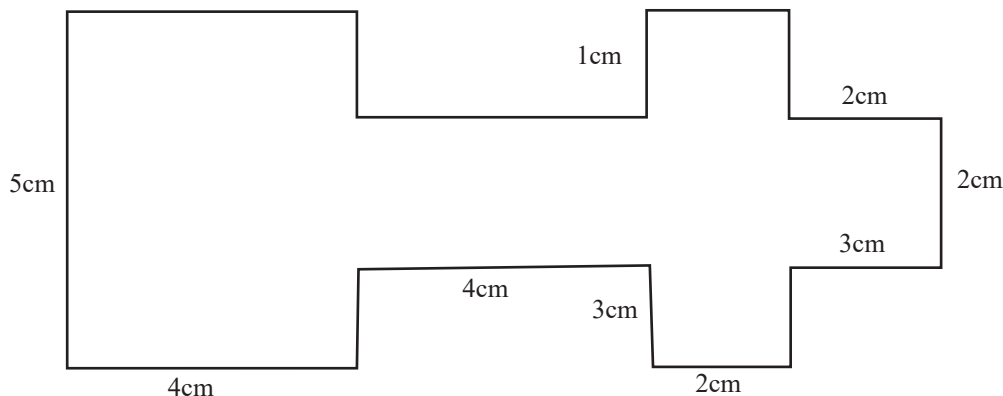


- A.  $12\text{cm}^2$       B.  $50\text{cm}^2$       C.  $60\text{cm}^2$       D.  $72\text{cm}^2$
4. Sam is standing facing South East. He turns through 3 right angles in an anti-clockwise direction. He is now facing \_\_\_\_\_.  
A. North West      B. South West      C. South East      D. North East
  5. The sun rises in the \_\_\_\_\_.  
A. West      B. East      C. North      D. South
  6. Name these lines.



- A. Parallel lines      B. Perpendicular lines      C. Vertical lines      D. Diagonal lines

17. How many right angles have the value of a straight line in terms of size?  
 A. 2                      B. 3                      C. 4                      D. 5
18. A line that divides a square into two equal triangles is called a \_\_\_\_ line.  
 A. circumference      B. height              C. radius              D. diagonal
19. The area of a rectangular garden is  $600\text{m}^2$ . Its breadth is 20m. Calculate the length of the garden.  
 A. 30m                  B. 40m                  C. 50m                  D. 60m
20. Find the area of this composite shape below.



1 cm and 3 cm distances seem to be equal.

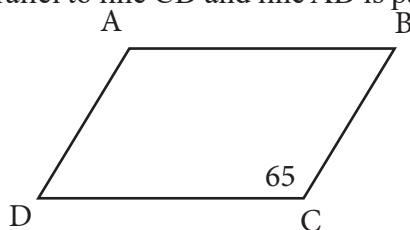
- A.  $75\text{cm}^2$               B.  $44\text{cm}^2$               C.  $35\text{cm}^2$               D.  $23\text{cm}^2$

### Structured questions (Paper 2)

- (a) Answer all the questions.  
 (b) If working is needed for any question it must be shown.  
 (c) Omission of essential working may result in loss of marks.
- Themba is facing West. He turns through 3 right angles in an anticlockwise direction. He is now facing \_\_\_\_\_.
  - A man is facing North west. He turns through  $2\frac{1}{2}$  right angles in a clockwise direction. He is now facing \_\_\_\_\_.
  - The circumference of a wheel is 1.2m. The wheel is rolled 5 times. How far does it go?
  - A line that cuts a circle into two equal parts is called a \_\_\_\_.
  - The diameter of a circle is double its \_\_\_\_\_.
  - Calculate angle  $y$  below given that the exterior angle is  $230^\circ$ .



7. In the shape below, line AB is parallel to line CD and line AD is parallel to line BC. Calculate angle ADC.



# ZIMBABWE GRADE SEVEN EXAMINATIONS

## MATHEMATICS PAPER 1

702/1

SPECIMEN PAPER

Time: 2 hours

Time: 2 hours

### INSTRUCTIONS TO CANDIDATES

1. Read **all** the instructions carefully.
2. **Do not** open this booklet until you are told to do so by the invigilator.
3. Use only an HB pencil for all entries on the answer sheet.
4. When you are told to start, choose **one** correct answer from the suggested answers and shade it **very dark** as shown in the examples at the top of the answer sheet.
5. If you wish to change your answer, **erase it completely** with a pencil rubber and then shade the new choice.
6. If **more** than **one** box is shaded for any one answer, that answer will be regarded as **wrong**.
7. **If you do not understand** the instructions, **ask** the invigilator to explain them to you **before you start**.
8. Answer **all** the questions on the separate answer sheet provided.
9. Rough paper will be provided.

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**This specimen paper consists of 9 printed pages and 3 blank pages.**

Specimen Paper

[Turn over

# ZIMBABWE GRADE SEVEN EXAMINATIONS

## MATHEMATICS PAPER 2

**702/2**

**SPECIMEN PAPER**

**Time: 2 hours**

**Candidates answer on the question paper.**

Time: 2 hours

### INSTRUCTIONS TO CANDIDATES

1. Write your name, centre number and candidate number on the spaces at the top of this page.
2. Answer **all** questions in **Section A** and any **three** questions in Section B.
3. If more than **three** questions are answered in **Section B**, the first three will be considered.
4. If working is needed for any question it must be shown in the space below that question.
5. Omission of essential working may result in loss of marks.
6. Answers must be written in the spaces indicated below each question.
7. Do **not** measure from given diagrams.
8. Electronic calculators and slide rules **must not** be used in the examination.

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**This specimen paper consists of 7 printed pages and 1 blank page.**

Specimen Paper

**[Turn over**

# GRADE 7 EXAMINATION PRACTICE 1 (NUMBERS)

## MATHEMATICS

702/1

### PAPER 1

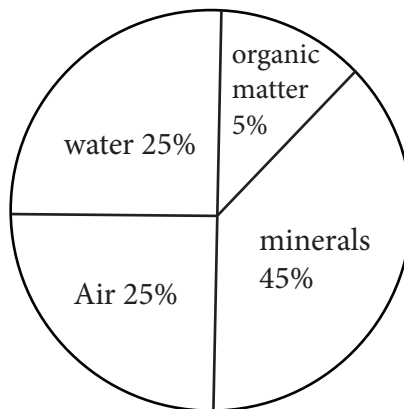
TIME: 2 HOURS

#### INSTRUCTIONS TO CANDIDATES

- When you are told to start, choose **one** correct answer from the suggested answers.
- Answer **all** questions by choosing the correct answer from the options given.
- Make calculations on your rough paper, do not guess answers.

- 34 891 written in words is
  - thirty-four hundred and eight nine one.
  - thirty-four thousand eight hundred and nineteen.
  - thirty-four thousand and ninety-one.
  - thirty-four thousand eight hundred and ninety-one.
- Which number comes before 940 417?
  - 940 416
  - 940 418
  - 940 419
  - 940 420
- Find the value of 8 in 981 624.
  - 8 Tens
  - 800
  - 8 000
  - 80 000
- 9 438 143 written in expanded notation is
  - $9\,000\,000 + 400\,000 + 30\,000 + 8\,000 + 100 + 40 + 3$
  - $9\,000\,000 + 4\,000\,000 + 30\,000 + 8\,000 + 1000 + 40 + 3$
  - $9\,000\,000 + 400\,000 + 3\,000 + 8\,000 + 1000 + 40 + 3$
  - $400\,000 + 30\,000 + 8\,000 + 100 + 40 + 3 + 900\,000$
- Round off 46 923 to the nearest 10.
  - 46 920
  - 46 900
  - 46 000
  - 41 000
- What is the number XXVII written in Arabic numerals?
  - 25
  - 26
  - 27
  - 28
- Which set of numbers is arranged in the correct descending order?
  - 468 937; 368 873; 873 368 99 046
  - 99 046; 468 937; 368 873; 873 368
  - 873 368; 468 937; 368 873; 99 046
  - 99 046; 368 873; 468 937; 873 368
- Choose the best sign to replace  $\square$  to make this statement  $346\% \square \frac{323}{50}$  correct.
  - $>$
  - $=$
  - $+$
  - $<$

20. Three parts of a regular pentagon are shaded. What percentage of the shape is shaded?  
 A. 30%                      B. 60%                      C. 70%                      D. 90%
21. A bus carries approximately \_\_\_\_\_ people seated.  
 A. 21                      B. 75                      C. 210                      D. 400
22. The picture shows the composition of soil. What fraction of the soil is covered by minerals?



- A.  $\frac{9}{20}$                       B.  $\frac{1}{4}$                       C.  $\frac{1}{20}$                       D.  $\frac{45}{50}$
23. Which of the following fractions is equivalent to 136%?  
 A.  $1\frac{3}{6}$                       B.  $1\frac{9}{25}$                       C.  $1\frac{36}{50}$                       D.  $1\frac{4}{5}$
24. Choose a letter A, B, C or D that contains fractions written in order beginning with the smallest going to the largest.
- A.  $\frac{1}{2}$        $\frac{1}{3}$        $\frac{1}{4}$        $\frac{1}{5}$        $\frac{1}{6}$     B.  $\frac{1}{3}$        $\frac{1}{2}$        $\frac{1}{4}$        $\frac{1}{6}$        $\frac{1}{5}$   
 C.  $\frac{1}{2}$        $\frac{1}{3}$        $\frac{1}{4}$        $\frac{1}{6}$        $\frac{1}{5}$     D.  $\frac{1}{6}$        $\frac{1}{5}$        $\frac{1}{4}$        $\frac{1}{3}$        $\frac{1}{2}$
25. Which one of these fractions is the smallest of them all?  
 A.  $\frac{1}{2}$                                       B.  $\frac{13}{39}$   
 C.  $\frac{49}{100}$                                       D.  $\frac{9}{17}$
26. What number is even?  
 A. 35 116                      B. 35 105                      C. 60 153                      D. 60 101
27. Study and complete this number sequence by looking for a missing number;  
 1; 2; 4; 7; 11; 16; 22; \_\_\_\_\_ 37  
 A. 28                      B. 29                      C. 30                      D. 31
28. The table below shows

		U	
***	*****	*	****
*****	****	****	*****

- A. 9 999.                      B. 351.4.                      C. 648.5.                      D. 35.14.



# GRADE 7 EXAMINATION PRACTICE 1

## MATHEMATICS

702/2

### PAPER 2

TIME: 2 HOURS

#### INSTRUCTIONS TO CANDIDATES

- Answer **all** questions in **Section A** and any **three** questions in Section B.
- If more than **three** questions are answered in **Section B**, the first three will be considered.
- If working is needed for any question it must be shown.
- Omission of essential working may result in loss of marks.
- Marks allocated to each question are shown in brackets.
- Electronic calculators and slide rules **must not** be used in the examination.

#### Section A (25 marks)

Answer **all** questions in this section.

- Write these numbers in words.
  - 3 749 319 [1]
  - 8 700 405 [1]
- Write these numbers in numerals.
  - One million and seven. [2]
  - Three million, five hundred thousand and thirty-six. [3]
- Find the value of underlined digits.
  - 8 468 [2]
  - 9.039 [2]
- Expand these numbers.
  - 64 873 [2]
  - 4.37 [2]
- Arrange these numbers in their correct ascending order.
  - 342; 534 213; 89 122; 34 006; 12 232 [1]
  - 1.089; 1.089; 0.999; 0.423; 3.001 [2]
- $26\,542 = (2 \times 10^4) + ( \quad 6 \times 10^3) + (5 \times 10^2) + (4 \times \underline{\quad}) + (2 \times \underline{\quad})$  [1]
- Use  $>$ ,  $<$  or  $=$  to make the following statements true.
  - $0.467 \square 1.001$  [1]
  - $4\frac{1}{2} \square \frac{11}{2}$  [1]
  - $50\% \square \frac{60}{120}$  [2]
- Give any two prime factors of 50. [2]

# GRADE 7 EXAMINATION PRACTICE 2

## MATHEMATICS

702/1

### PAPER 1

TIME: 2 HOURS

#### INSTRUCTIONS TO CANDIDATES

- When you are told to start, choose **one** correct answer from the suggested answers.
- Answer **all** questions by choosing the correct answer from the options given.
- Make calculations on your rough paper, do not guess answers.

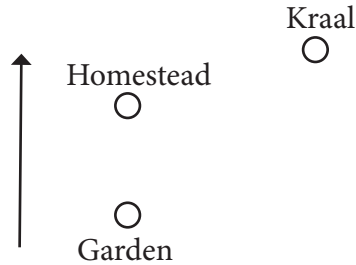
- 300 890 in words is
  - three hundred eight hundred and ninety.
  - three hundred and eighty-ninety thousand.
  - three hundred thousand eight hundred and ninety.
  - three thousand eight hundred and ninety.
- 589,078 to one decimal place is
  - 5,89078.
  - 58907,8.
  - 589,07
  - 589,1.
- $90 + 72 \div 9$ 
  - 162.
  - 98.
  - 18.
  - 8.
- The fraction  $3\frac{3}{4}$  as an improper fraction is
  - $\frac{9}{4}$ .
  - $\frac{6}{4}$ .
  - $\frac{15}{4}$ .
  - $\frac{33}{4}$ .
- A heptagon has how many sides?
  - 8
  - 7
  - 6
  - 5
- Below is a shape.



The shape above is a

- parallelogram.
  - rectangle.
  - rhombus.
  - square.
- 42 count back 6 is
    - 7.
    - 36.
    - 48.
    - 252.
  - $0,024 \div 0,4$ 
    - 6.
    - 0,6
    - 0,06.
    - 0,006.
  - What is the next number?  
11, 14, 17, 20, \_\_\_\_.
    - 22
    - 23
    - 24
    - 25

25. There are 120 people at a wedding 65% of them are adults. How many children are at the wedding?  
 A. 35                      B. 42                      C. 65                      D. 78
26. The perimeter of a square is 32cm. What is its area?  
 A.  $4\text{cm}^2$                       B.  $8\text{cm}^2$                       C.  $16\text{cm}^2$                       D.  $64\text{cm}^2$
27. Mrs Kino's plot is 2 hectares.  $\frac{3}{5}$  of the plot is under maize. What area is under maize, in  $\text{cm}^2$ ?  
 A. 4 000                      B. 8 000                      C. 10 00                      D. 12 000
28. The map below shows the position of the homestead, kraal and garden for Gata Family.



- The direction of the kraal from the garden is  
 A. North East.                      B. East.                      C. South East.                      D. North.
29. A dozen means  
 A. 6.                      B. 10.                      C. 12.                      D. 14.
30. Three-eighths of 2 days is  
 A. 6 hours.                      B. 12 hours.                      C. 18 hours.                      D. 24 hours.
31. The interest for \$480 invested for 3 years at 15% interest is  
 A. \$9.                      B. \$24.                      C. \$108.                      D. \$216.
32.  $1\frac{2}{5} \times 1\frac{2}{3}$   
 A.  $2\frac{1}{8}$                       B.  $2\frac{1}{2}$ .                      C.  $2\frac{1}{3}$ .                      D.  $2\frac{1}{4}$ .
33.  $13 - 19 + 14$   
 A. 8.                      B. 10.                      C. 20.                      D. 27.
34. Below is a table showing marks obtained by 4 learners in Mathematics.
- | Name | Tsitsi | Leah | Joe | Vhusa |
|------|--------|------|-----|-------|
| Mark | 35     | -    | 33  | 37    |
- If the mean of their marks is 36, then Leah's mark was  
 A. 39.                      B. 144.                      C. 105.                      D. 36.
35. The cost of tiling a floor of area  $8\frac{1}{2}\text{m}^2$  at \$2,50 per square metre is  
 A. \$16,50.                      B. \$21,25.                      C. \$212,50.                      D. \$2125,00.
36. Danai has three \$5 notes, five \$2 notes, four \$1 coins and seven 50 c coins. How much does she have altogether?  
 A. \$31,00                      B. \$31,50                      C. \$32,00                      D. \$32,50

# GRADE 7 EXAMINATION PRACTICE 2

## MATHEMATICS

702/2

## PAPER 2

TIME: 2 HOURS

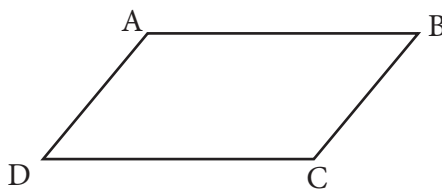
### INSTRUCTIONS TO CANDIDATES

- Answer **all** questions in **Section A** and any **three** questions in Section B.
- If more than **three** questions are answered in **Section B**, the first three will be considered.
- If working is needed for any question it must be shown.
- Omission of essential working may result in loss of marks.
- Marks allocated to each question are shown in brackets.
- Electronic calculators and slide rules **must not** be used in the examination.

### Section A (25 marks)

Answer **all** questions in this section.

- Write 5 008 in words. [1]
  - What does the underlined digit in the number 905,23 represent on the abacus? [1]
- Express 0,65 as a fraction in its lowest terms. [2]
  - Find  $4^4 - 4$ . [2]
- Write
  - 1435 in 12-hour notation. [1]
  - $\frac{4}{5}$  of two decades in years. [2]
- Simplify
  - $6 - 2,59$ ; [2]
  - $0,04 \times 3,2$ . [2]
- Simplify  $83 - 78 \div 6$ . [2]
- Below is a shape.



- State the special name given to the shape ABCD. [1]
  - Write down the line parallel to line BC. [1]
  - If line AB is 5,5cm and line BC is 2,5cm, find the perimeter of the shape. [2]
- Eve got 45 out of 75 marks in a Mathematics test.  
Express the mark she got as a percentage. [2]
  - Matty bought a bed marked \$600. He got 15% discount. Find how much he paid for the bed. [2]
  - A triangle has angles  $65^\circ$ ,  $72^\circ$  and  $y$ . Find the value of  $y$ . [2]

**13.** Bongi, Sarah and Rati shared \$3 600 in the ratio 2:3:5, respectively.

(a) Write down Bongi's share as a fraction of Rati's share.

[1]

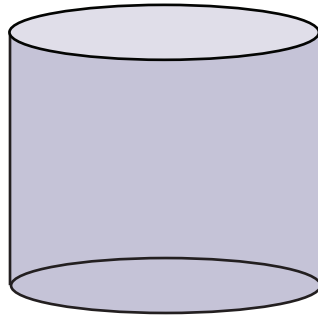
(b) Calculate Sarah's share.

[2]

(c) Find the sum of Bongi and Rati's shares.

[2]

**14.** Below is a water tank at Farasi Farm. When full, the tank holds 1 000 000 litres.



(a) State the special name given to the shape of the tank.

[1]

(b) Find the number of 80-litre containers that can be filled from the tank when full.

[2]

(c) Find the volume of the tank when  $\frac{1}{4}$  full, in litres.

[2]

# GRADE 7 EXAMINATION PRACTICE 9

## MATHEMATICS

702/1










### PAPER 1

TIME: 2 HOURS

#### INSTRUCTIONS TO CANDIDATES

- When you are told to start, choose **one** correct answer from the suggested answers.
- Answer **all** questions by choosing the correct answer from the options given.
- Make calculations on your rough paper, do not guess answers.

1. The number shown on the abacus below is

TTh	Th	H	T	U
				
				

- A. 54 106.      B. 45 893.      C. 99 999.      D. 88 888.
2. Which of the following is a square number?  
A. 3      B. 5      C. 49      D. 90
3. The missing number in the number pattern 2; 4; 8; 16; 32; 64;  
A. 65.      B. 96.      C. 120.      D. 128.
4. 0,3 as a percentage is  
A. 7%.      B. 30%.      C. 0,3%.      D. 30,3%.
5. A mass of 9.005 kg expressed in grammes is  
A. .9g.      B. 905g.      C. 9 005g.      D. 9,005g.
6.  $\frac{5}{20}$  in its lowest terms is  
A.  $\frac{1}{20}$       B.  $\frac{1}{4}$       C.  $\frac{1}{5}$       D.  $\frac{1}{7}$ .
7. 13.87 correct to one decimal place is  
A. 13.93      B. 13.9      C. 13.1      D. 13.94
8. 9 453 cents written in decimal notation is  
A. \$945.300.      B. \$9.45300.      C. \$9 453.00.      D. \$94.53.

25. How many 5cm cubes will exactly fit in a box measuring 15cm by 10cm by 5cm?
- A. 24                      B. 27                      C. 150                      D. 162
26. A farmer has 45 animals. If 36 of them are cows and donkeys put together and the rest are goats then find the number of goats.
- A. 5                      B. 9                      C. 25                      D. 41
27.  $7^2$  is the same as
- A.  $7 \times 2$ .                      B.  $7 \times 72$ .                      C.  $7 \times 7$ .                      D.  $7 + 7$ .
28. An angle of  $90^\circ$  is
- A. an acute angle.      B. a right angle.      C. an obtuse angle.      D. a reflex angle.
29. A cyclist covered a distance of 20km in 30 minutes. What is the average speed of the cyclist?
- A. 40km/h                      B. 50km/h                      C. 60km/h                      D. 100km/h
30. The perimeter of a rectangle is 24cm. Its length is 7cm. What is the area of the shape?
- A.  $34 \text{ cm}^2$                       B.  $35 \text{ cm}^2$                       C.  $44 \text{ cm}^2$                       D.  $66 \text{ cm}^2$
31. A car takes 2 hours 15 minutes to complete a journey. If the car's average speed is 72 km/h, how long was the journey?
- A. 32km                      B. 144km                      C. 162km                      D. 180km
32. A security officer was on duty from 10.45 pm to 7.30 am the following day. For how long was the security officer on duty?
- A. 3 hours 15 minutes.                      B. 7 hours 45 minutes.  
C. 8 hours 45 minutes.                      D. 18 hours 15 minutes.
33. Mrs Lutshaba sells goods at 5% commission. How much commission does she get after selling goods worth \$150?
- A. \$157,50                      B. \$3,00                      C. \$142,50                      D. \$7,50
34. The average age of 4 gentlemen is 35 years. One gentleman is 30 years old and the second is 33 years old. The third is 36 years old. Find the age of the oldest gentleman.
- A. 49                      B. 41                      C. 39                      D. 37
35. A rectangular garden measures 12 metres by 8 metres. Find the perimeter of the garden.
- A. 20m                      B. 96m                      C. 39m                      D. 40m
36. Tom and James shared \$60 in the ratio 3:2 respectively. How much money did Tom get?
- A. \$12,00.                      B. \$20,00.                      C. \$24,00.                      D. \$36,00.
37. Tarisai invested \$1 000 in a bank for 5 years. If simple interest was earned at a rate of 10% per year, then the total amount after 5 years is
- A. \$450.                      B. \$500.                      C. \$1 250.                      D. \$1 550.
38. What is 47 563m written in km?
- A. 47.563km                      B. 475.63km                      C. 4.7563km                      D. 4756.3km

# GRADE 7 EXAMINATION PRACTICE 10

## MATHEMATICS

702/02

### PAPER 2

TIME: 2 HOURS

#### INSTRUCTIONS TO CANDIDATES

- Answer **all** questions in **Section A** and any **three** questions in Section B.
- If more than **three** questions are answered in **Section B**, the first three will be considered.
- If working is needed for any question it must be shown.
- Omission of essential working may result in loss of marks.
- Marks allocated to each question are shown in brackets.
- Electronic calculators and slide rules **must not** be used in the examination.

#### Section A (25 marks)

*Answer **all** questions in this section.*

1. XLVIII written in Arabic numerals is \_\_\_\_\_. [1]
2. (a) The result of increasing 675 by 978 is \_\_\_\_\_. [2]  
(b) Find the value of  $0,03 \times 0,03$ . [2]  
(c) Simplify  $23(234) + 245$ . [1]
3. Express quarter past 12 midnight in 24-hour notation. [1]
4. (a) Find the number of lines of symmetry for a square. [1]  
(b) The diameter of a circle is 12cm. Find its radius. [3]  
(c) Calculate the perimeter of a regular six-sided shape with a side of 6cm. [3]
5. Find the lowest common multiple (L.C.M) of 9 and 12. [2]
6. State the value of 2 in 0.428. [1]
7. A farmer has \$64 000.00.  
(a) Find 25% of the farmer's money. [2]  
(b) If the farmer uses 15% of his money then how much money is used? [2]
8. A carpenter bought a hack saw at \$2 460, a table at \$3 879 and a hammer at \$908.30.  
(a) Find how much he paid altogether. [1]  
(b) Calculate the difference between the price of a table and that of a hammer. [3]



# SUGGESTED ANSWERS TO ALL EXERCISES AND EXAMINATIONS

## UNIT 1: NUMBER (WHOLE)

### Practice 1 (Suggested answers)

- 542 written in words is five hundred and forty-two.
- 16 283 written in words is sixteen thousand two hundred and eighty-three.
- 152 758 written in words is one hundred and fifty-two thousand seven hundred and fifty-eight.
- 769 312 written in words is seven hundred and sixty-nine thousand three hundred and twelve.
- 5 132 412 written in words is five million one hundred and thirty-two thousand four hundred and twelve.

### Practice 2 (Suggested answers)

- |            |              |                |
|------------|--------------|----------------|
| 1. 900     | 5. 2 tens    | 9. 300 000     |
| 2. 2 units | 6. 1 million | 10. 60 million |
| 3. 4 units | 7. 7 units   |                |
| 4. 3 Tens  | 8. 40 000    |                |

### Practice 3 (Suggested answers)

- $2^2 = 2 \times 2 = 4$
- $5^3 = 5 \times 5 \times 5 = 125$
- $10^3 = 10 \times 10 \times 10 = 1\ 000$
- $10^1 = 10$
- $10^2 = 100$
- $(10^5 \times 3) + (10^4 \times 5) + (10^3 \times 7) = 357\ 000$
- $(10^0 \times 6) + (10^4 \times 3) + (10^2 \times 7) + (10^1 \times 8) = 30\ 786$
- $(10^5 \times 3) + (10^4 \times 5) + (10^3 \times 7) + 10^2 \times 6 = 357\ 600$
- $(10^5 \times 3) + (10^2 \times 6) = 300\ 600$
- $(10^2 \times 4) + (10^1 \times 2) + (10^0 \times 2) = 422$

### Multiple Choice Practice (Paper 1) (Suggested answers)

- |      |       |       |       |
|------|-------|-------|-------|
| 1. D | 6. C  | 11. B | 16. A |
| 2. C | 7. C  | 12. D | 17. B |
| 3. C | 8. D  | 13. A | 18. C |
| 4. B | 9. D  | 14. A | 19. B |
| 5. B | 10. A | 15. D | 20. A |

## Structured questions (Paper 2) (Suggested answers)

- Writing numbers in words:
  - 176 is one hundred seventy-six.
  - 657 907 Six hundred and fifty-seven thousand nine hundred and seven.
  - 1 000 634 One million six hundred and thirty-four.
- Writing numbers in numerals.
  - 307 015
  - 2 300 096
  - 426 879
- Correct descending order.  
9 324 122; 231 235; 76 213; 60 600; 55 891; 32 980;
- Any three numbers found by multiplying two same numbers e.g., 81 got by multiplying 9 by 9.
- Number sequences.
  - 213 543    313 544    413 545    513 546    413 547
  - 13            26            39            52
- 23 322
  - 221 403
- 6 units
  - 300
  - 9 000 000
  - 300 000
- Expanding the following numbers.
  - $200 + 40 + 5$
  - $123\ 747 = 100\ 000 + 20\ 000 + 3\ 000 + 700 + 40 + 7$
  - $7\ 392\ 458 = 7\ 000\ 000 + 300\ 000 + 90\ 000 + 2\ 000 + 400 + 50 + 8$
- $3^3$  is  $3 \times 3 \times 3$  which is 27
  - $10^4$  is  $10 \times 10 \times 10 \times 10$  which is 10 000
  - $5^3$  is  $5 \times 5 \times 5$  which is 125
- $657 = (6 \times 10^2) + (5 \times 10^1) + (7 \times 10^0)$

## UNIT 2: NUMBER (WHOLE NUMBERS)

### Practice 1 (Suggested answers)

- |          |              |
|----------|--------------|
| 1. 320   | 6. 50 000    |
| 2. 490   | 7. 200 000   |
| 3. 200   | 8. 9 000 000 |
| 4. 3 200 | 9. 9 000 000 |
| 5. 9 000 | 10. 4 000    |

# GRADE 7 EXAMINATION PRACTICE - PAPER 1 ANSWERS

EXAM 1
1. D
2. A
3. D
4. A
5. A
6. C
7. C
8. D
9. A
10. D
11. C
12. D
13. C
14. C
15. A
16. B
17. B
18. C
19. B
20. B
21. B
22. A
23. B
24. D
25. B
26. A
27. B
28. B
29. C
30. C
31. B
32. A
33. B
34. D
35. A
36. A
37. B
38. B
39. C
40. D

EXAM 2
1. C
2. D
3. C
4. C
5. B
6. A
7. B
8. C
9. B
10. D
11. C
12. D
13. C
14. B
15. A
16. A
17. D
18. C
19. D
20. C
21. D
22. A
23. D
24. A
25. B
26. D
27. D
28. A
29. C
30. C
31. D
32. C
33. A
34. A
35. B
36. D
37. D
38. D
39. A
40. B

EXAM 3
1. B
2. B
3. A
4. D
5. D
6. B
7. B
8. D
9. C
10. C
11. D
12. A
13. A
14. B
15. A
16. C
17. B
18. C
19. D
20. C
21. B
22. C
23. A
24. D
25. D
26. C
27. C
28. C
29. B
30. D
31. A
32. B
33. B
34. A
35. B
36. D
37. C
38. A
39. B
40. C

EXAM 4
1. C
2. B
3. C
4. D
5. C
6. A
7. B
8. B
9. B
10. D
11. B
12. D
13. C
14. A
15. C
16. D
17. B
18. A
19. B
20. A
21. C
22. A
23. A
24. D
25. D
26. C
27. C
28. A
29. B
30. C
31. D
32. D
33. A
34. D
35. C
36. C
37. B
38. B
39. D
40. B

EXAM 5
1. D
2. A
3. B
4. A
5. C
6. C
7. A
8. D
9. A
10. C
11. D
12. C
13. C
14. D
15. C
16. A
17. D
18. C
19. B
20. C
21. B
22. A
23. A
24. A
25. D
26. A
27. B
28. C
29. B
30. C
31. B
32. B
33. D
34. B
35. D
36. A
37. A
38. B
39. C
40. A

EXAM 6
1. C
2. B
3. B
4. A
5. B
6. C
7. D
8. C
9. C
10. B
11. C
12. C
13. C
14. C
15. B
16. D
17. A
18. C
19. B
20. C
21. D
22. B
23. B
24. A
25. D
26. A
27. B
28. C
29. A
30. D
31. B
32. D
33. D
34. C
35. A
36. D
37. A
38. B
39. D
40. A

## EXAMINATION PRACTICE 1 - PAPER 2

### ANSWERS

#### Section A

- (i) Three million seven hundred and forty-nine thousand three hundred and nineteen.  
(ii) Eight million seven hundred thousand four hundred and five.
- (i) 1 000 007 (ii) 3 500 036
- (i) 8 thousand (ii)  $\frac{3}{100}$
- (i)  $60\,000 + 4\,000 + 800 + 70 + 3$   
(ii)  $4 + \frac{3}{10} + \frac{3}{100}$
- (i) 342; 12 232; 34 006; 89 122; 534 213  
(ii) 0.423 0.999 1.089 3.001
- $26\,542 = (2 \times 10^4) + (6 \times 10^3) + 5 \times 10^2 + 4 \times 10^1 + (2 \times 10^0)$
- (i) < (ii) < (iii) =
- Any two prime factors of 50 for example 2 and 5.

#### Section B

- (i) 1.007 0.999 0.5 0.19  
(ii)  $\frac{1}{2}$   $\frac{1}{5}$   $\frac{1}{20}$   $\frac{1}{43}$
- (a) 19 (b) 7 (c) 122
- (a) 320 000 (b) 120 000 (c) 2 970 000
- (i) 0.125 (ii) 0.25 (iii) 0.5
- (i)  $\frac{1}{2}$  (ii)  $\frac{2}{3}$  (iii)  $\frac{4}{7}$

## EXAMINATION PRACTICE 2 - PAPER 2

### ANSWERS

#### Section A

- (a) five thousand and eight  
(b) 2 tenths or  $\frac{2}{10}$
- (a)  $\frac{13}{20}$  (b) 252
- (a) 2.35 p.m. (b) 16
- (a) 3,41 (b) 0,128
- 70
- (a) parallelogram (b) AD (c) 16 cm
- 60
- 510

#### Section B

- $43^0$
- (a)  $\frac{29}{30}$   
(b) 75
- (a) 16 cm (b) 12 cm<sup>2</sup>
- (a) Anesu (b) 1 kg (c) 18 kg
- (a)  $\frac{2}{10}$  (b) \$1 080,00 (c) 2 520
- (a) cylinder  
(b) 12 500  
(c) 250 000 litres

## EXAMINATION PRACTICE 3 - PAPER 2

### ANSWERS

#### Section A

- 9 000
- (a) 97 (b) 5 520
- (a) 0,58 (b) 58%
- (a) 6,997 (b) 504
- (a) 7 (b) 49cm<sup>2</sup>
- 40
- (a) Pam (b) \$1 200,00
- 6 minutes

#### Section B

- (a) 180<sup>0</sup>  
(b)  $\frac{1}{2}$   
(c) \$375,00
- (a) cuboid or rectangular prism  
(b) 8  
(c) 6  
(d) 70 cm<sup>3</sup>
- (a) 8.30 a.m.  
(b) 7.42 a.m. or 0742  
(c) 2 hours 45 minutes
- (a) \$1 500  
(b) \$600
- (a) 6,75 kg (b) 0,25 kg