

Volume 1

PLUS ONE

Study Pack

Mathematics

Agriculture, Science and Technology

Grade

4



New Curriculum
With
Answers

Volume 1

PLUS ONE

Study Pack

Mathematics

Agriculture, Science and Technology

Grade 4

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Answers

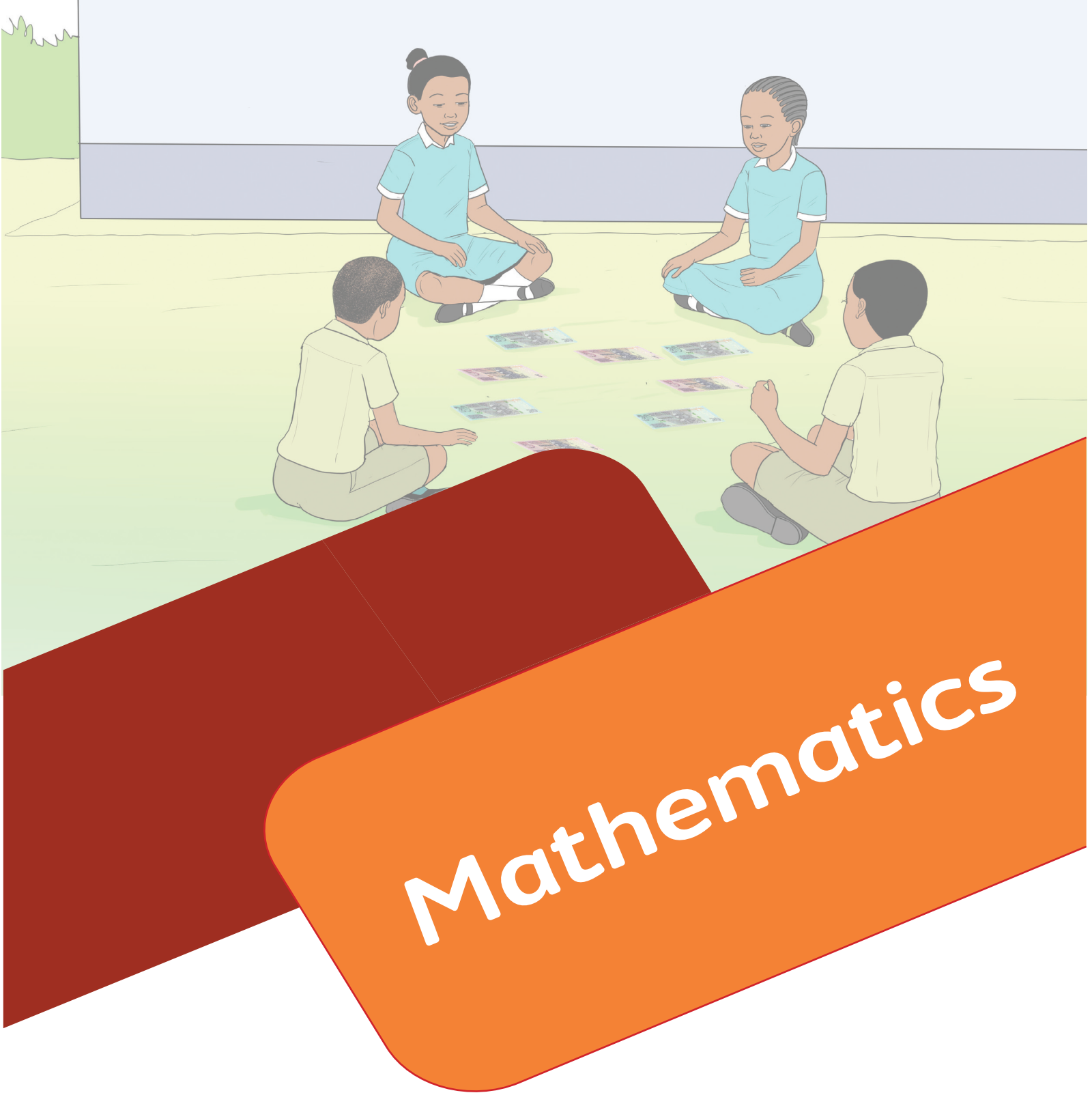
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INTRODUCTION

This Revision Guide is a one-stop source of extended learning for Mathematics and Agriculture, Science and Technology built on a competence-based curriculum. It has been tailored in line with The Junior Primary Syllabus - Grade 4.

The contents of the text are curriculum companions aimed at supporting the learner to develop the skills and concepts in the specific syllabi. The specific learning outcomes integrate the required competences and values in the learner. The text is packed with the benefits to the teacher, learner and parent or guardian.

The text has brief notes, exercises, tests and possible solutions, that will enhance both facilitator involvement and milestone achievement by the learner.



Development Editor: Martha Daka

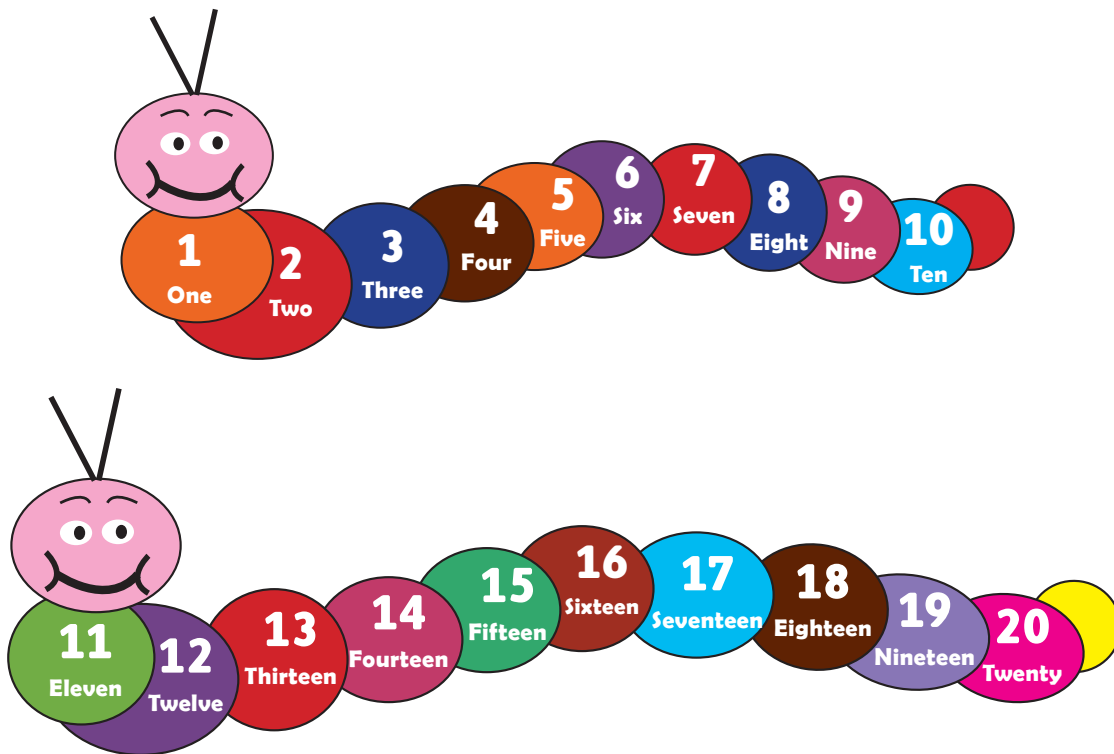
Authors: Esnath Pfupa and Desmond Mavhunga

Topic 1

Numbers

Whole numbers (0-10 000)

Numerals and words



Numbers can be written in numerals. For example 1 ; 2 ; 3 and 4.

In addition to that, numbers can be written in words. For example, one; two; three and four.

Example 1.1

1. Four thousand and ninety-six in numerals.
2. 143 in words.
3. Six hundred and eighty-nine in numerals.
4. Express 33 in words.

Solution

1. Four thousand and ninety-six is 4 096.
2. 143 in words is one hundred and forty-three.
3. Six hundred and eighty-nine in numerals is 689.
4. 33 in words is thirty-three.

Exercise 1.1

Write these numbers in words.

1. 36 045
2. 23
3. 321
4. 4 312

Write the following in digits.

5. Seventy-three thousand four hundred and forty.
6. Three thousand nine hundred and fifty-three.
7. Twelve thousand and eleven.
8. Four thousand six hundred and seventy-two.

Number line

Number lines are a great way to compare numbers.

They also help you to order numbers, understand place value and estimate where a number is.

This number line shows you numbers increasing in hundreds to 1 000.



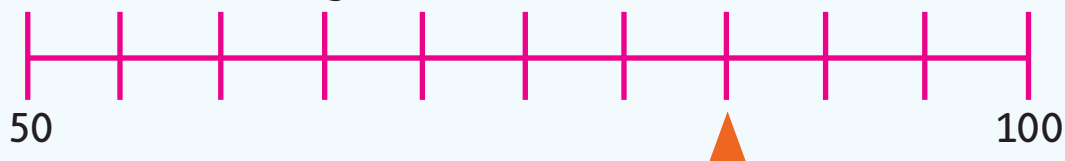
By looking at the number line, you can see how far 100 and 1 000 are away from each other.



Take a look at the examples below to see how you can use number lines to estimate, work out and write numbers.

Example 1.2

1. What number is being shown on the number line?



Solution

Step 1

Work out what each interval represents

The difference between 50 and 100 is 50.

$$100 - 50 = 50$$

Next, count the number of intervals. There are 10 in total.

How many five 10s get into 50? 5.

Each interval increases by 5 each time.

Step 2

Count the number of intervals

Count the number of intervals, starting at 50. There are 7 intervals.

Each interval represents 5.

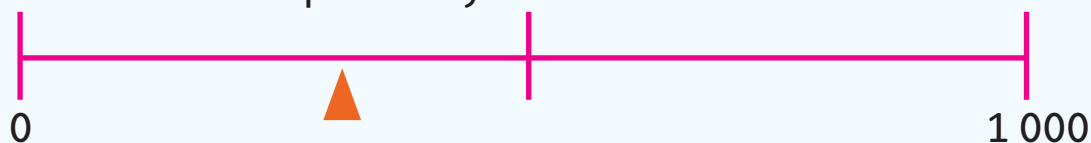
$$7 \times 5 = 35$$

Now, we can work out the answer. The number line starts at 50.

$$50 + 35 = 85$$

We can double check by counting 7 intervals from 50 on the number line. The arrow reaches the number 85.

2. Estimate the value pointed by the arrow.



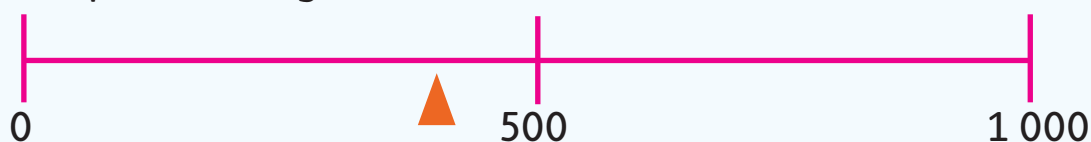
Solution

Step 1

Figure out where the halfway point is

The number line goes from 0 to 1 000.

The easiest thing to do first is to figure out where the halfway point, 500 is. This will help estimating the value of the arrow easier!

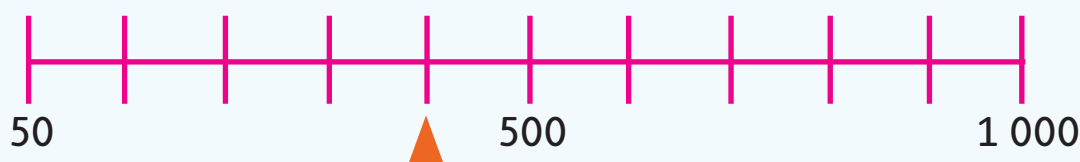


Now you can see that the arrow is closer to 500, the number must be between 0 and 500.

Step 2

Split the section into equal intervals

You can use the arrow to help you. If you split it into 5, the intervals will represent 100.



The arrow is pointing on the 4th interval.

As each interval is 100, you can estimate that the arrow is pointing to 400.

3. Where would you estimate 690 to be on this number line?



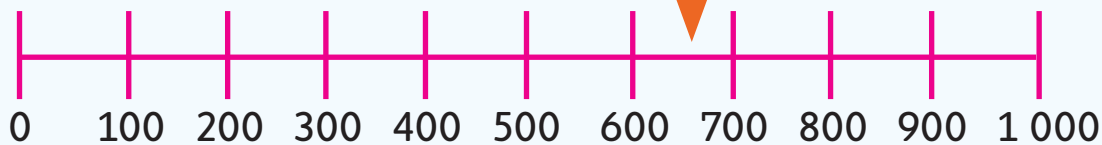
Solution

The intervals on the number line are going up in hundreds.

690 is positioned between 600 and 700.

690 is closer to 700 than 600. It is also past the halfway point between the numbers.

The arrow would be very close to 700 as shown.



Exercise 1.2

Write in the missing numbers on the number lines.

1. Counting by 5s



2. Counting by 1s



3. Counting by 5s



4. Counting by 10s



5. Counting by 1s



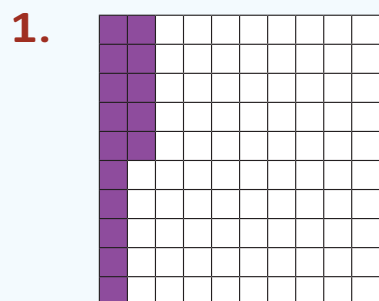
Ordinal numbers

Ordinal numbers help us communicate the order of objects in a series.

Writing percentages

Example 1.26

What percentage of the shape is shaded?

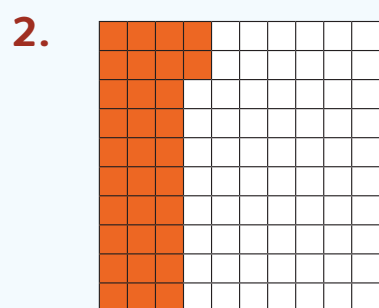


Solution

15 out of 100 squares are shaded.

0,15 of the shape is shaded.

15% of the shape is shaded.

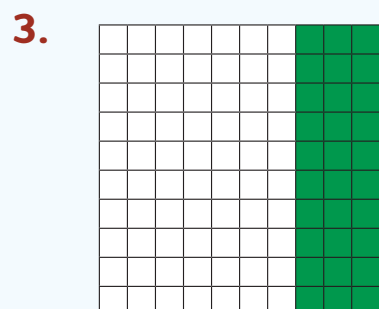


Solution

32 out of 100 squares are shaded.

0,32 of the shape is shaded.

32% of the shape is shaded.

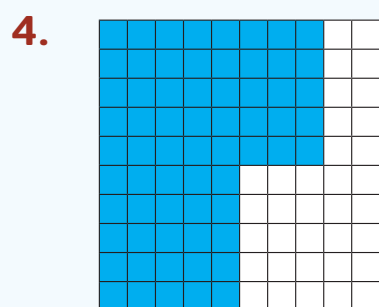


Solution

70 out of 100 squares are shaded.

0,7 of the shape is shaded.

70% of the shape is shaded.

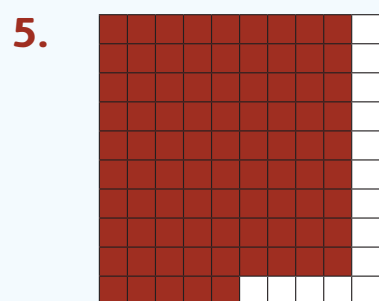


Solution

65 out of 100 squares are shaded.

0,65 of the shape is shaded.

65% of the shape is shaded.



Solution

86 out of 100 squares are shaded.

0,86 of the shape is shaded.

86% of the shape is shaded.

Topic 2

Operations

Addition of whole numbers

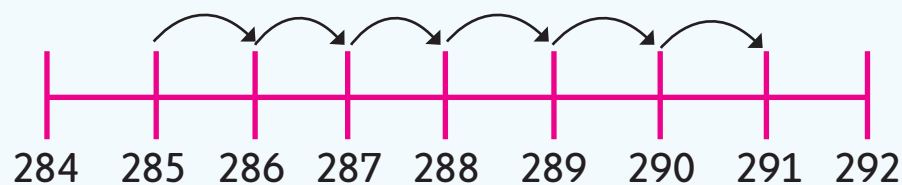
When you add a 1-digit number to a 3-digit number, the same rules apply as when you are adding a 1-digit number to a 1 or 2-digit number.

Example 2.1

Find the sum of 285 and 6.

Solution

Start on the number 285 and then count on 6.



Notice both digits in the tens and units have changed, this is because you bridged a ten when six was added.

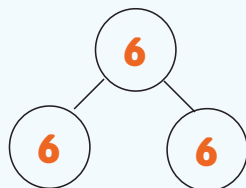
$$285 + 6 = 291$$

Example 2.2

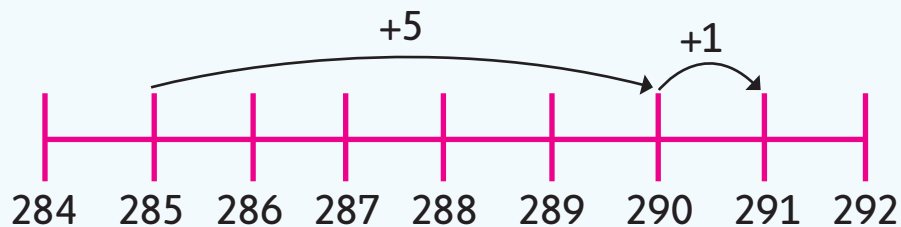
$$285 + 6 = \square$$

Solution

Partition the number 6



You can use your number line knowledge to add the 5 to reach the next ten, then add 1.



First add the 5 to take you to the next ten (290).

$$285 + 5 = 290$$

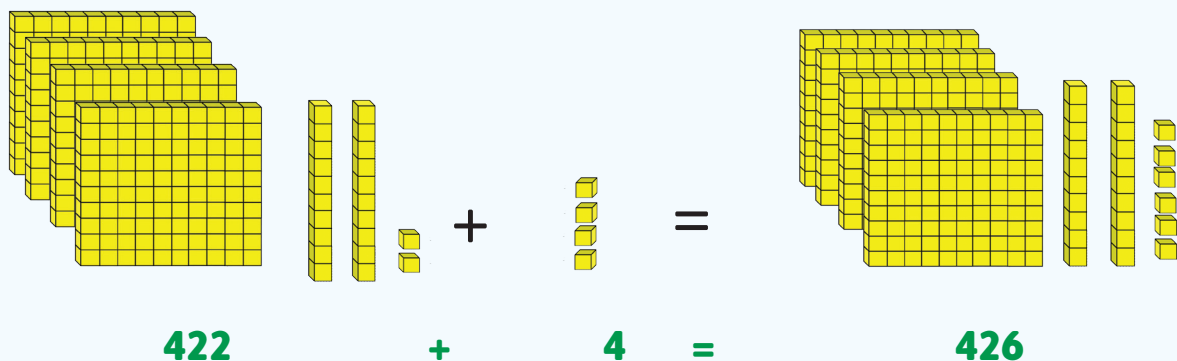
Add the 1.

$$290 + 1 = 291$$

Example 2.3

Find the total of 422 and 4.

Solution



Example 2.4

Calculate the sum of 239 and 4.

Use the column method to solve this question.

Lay the question out like this, with the 4 underneath the 9 in the units column.

Step 1

$$\begin{array}{r} 239 \\ + 4 \\ \hline \end{array}$$

Step 2

$$\begin{array}{r} 239 \\ + 4 \\ \hline 3 \\ 1 \end{array}$$

Start in the units column.

$$9 + 4 = 13$$

Write the 3 in 13 in the units column and then carry over the ten. This is to make sure each digit still has the right place value.

Move to the tens column.

$$3 \text{ tens} + 1 \text{ ten} = 4 \text{ tens}$$

Step 1

$$\begin{array}{r} 239 \\ + \quad 4 \\ \hline 43 \\ \text{1} \end{array}$$

Step 2

$$\begin{array}{r} 239 \\ + \quad 4 \\ \hline 243 \\ \text{1} \end{array}$$

Finally move to the hundreds column.

There is only two-hundred with nothing to add to it.

200 plus 0 is 200.

$$239 + 4 = 243$$

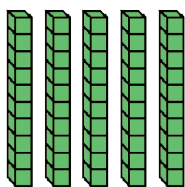
Exercise 2.1

Add the following using a number line.

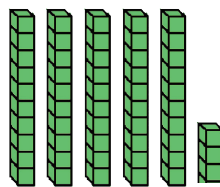
1. $62 + 38$
2. $14 + 55$
3. $27 + 49$
4. $36 + 28$

Simplify the following.

5.

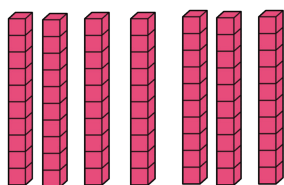


+

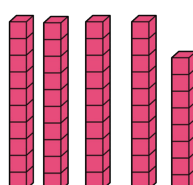


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6.

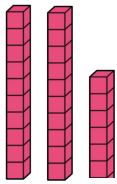


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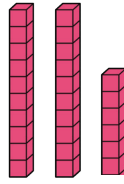


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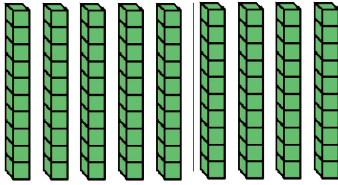
+



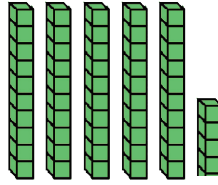
=



8.



+



=



Use the column addition method to simplify the following.

9.

$$\begin{array}{r} 935 \\ + 146 \\ \hline \end{array}$$

11.

$$\begin{array}{r} 323 \\ + 565 \\ \hline \end{array}$$

10.

$$\begin{array}{r} 289 \\ + 576 \\ \hline \end{array}$$

12.

$$\begin{array}{r} 739 \\ + 744 \\ \hline \end{array}$$

Addition of money

Example 2.5

1. Wynet has \$13. Andile has \$11. How much money do they have altogether?
2. After buying some marbles for \$16, Tumelo had \$12 left. How much money did he have to begin with?

Solution

1. Altogether they have = \$13 + \$11
Altogether they have = \$24
2. He had = \$16 + \$12
He had = \$28

2.

**Solution**2 rows \times 6 columns = 12 ice cream cones

$$2 \times 6 = 12$$

3.

**Solution**3 rows \times 6 columns = 18 cupcakes

$$3 \times 6 = 18$$

4.

**Solution**4 rows \times 5 columns = 20 tomatoes

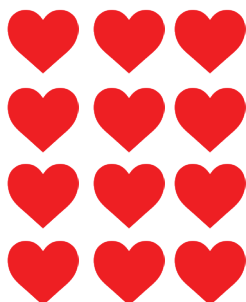
$$4 \times 5 = 20$$

Exercise 2.11*Write the multiplication sentence in each case.*

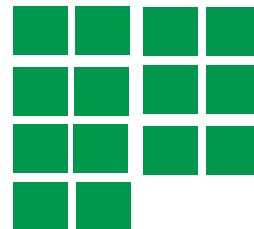
1.



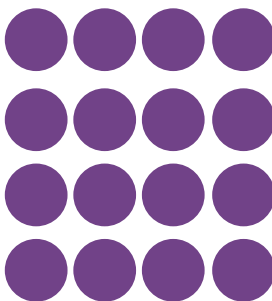
3.



5.



2.



4.



6.



$$\frac{3}{4} - \frac{1}{4} = \frac{3-1}{4} = \frac{2}{4}$$

Step 3

Simplify the fraction.

$$\frac{2}{4} = \frac{1}{2}$$

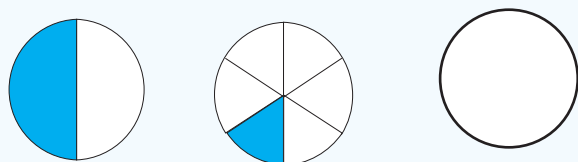
Example 2.39

$$\frac{2}{4} + \frac{1}{2}$$

Step 1

The bottom numbers (denominators) are different. See how the slices are of different sizes.

$$\frac{1}{2} + \frac{1}{6} = ?$$

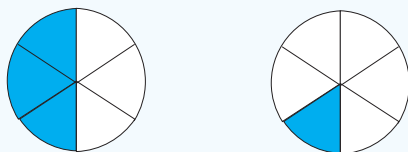


Multiply the top and the bottom of the first fraction $\frac{1}{2}$ by 3 to make the bottom numbers the same:

$$\frac{1 \times 3}{2 \times 3} = \frac{3}{6}$$

Now the fraction has the same bottom number 6.

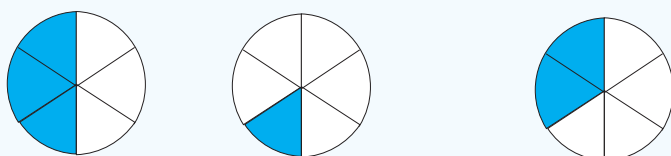
$$\frac{3}{6} - \frac{1}{6}$$



Step 2

Subtract the top numbers and put the answer over the same denominator.

$$\frac{3}{6} - \frac{1}{6} = \frac{2}{6}$$



Topic 3

Measures

Money

Expressing money in decimal form

Example 3.1

1. Express thirty cents in numerals.
2. Express fifty-one cents in numerals.

Solution

1. Thirty cents = $30 \div 100$
Thirty cents = \$0,30
2. Fifty-one cents = $51 \div 100$
Fifty-one cents = \$0,51

Exercise 3.1

Write the amount of money in numerals.

1. Eighty-five cents
2. Twelve dollars
3. Forty-five dollars
4. Nineteen dollars and thirteen cents
5. Seventy-three dollars and ninety cents

Expressing money in expanded form

Example 3.2

Express \$0,26 in expanded form.



Solution

The length of the pair of glasses is 5cm.

Exercise 3.12

Use the ruler below each object for accurate measurement.

1.



2.



3.



4.



5.



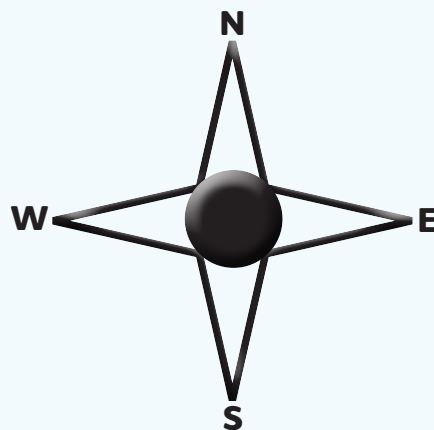
Converting units of length

10mm is equivalent to 1cm. When converting cm to mm, multiply by 10 and vice versa.

100cm is equal to 1m. When converting cm to m, divide by 100 and vice versa.

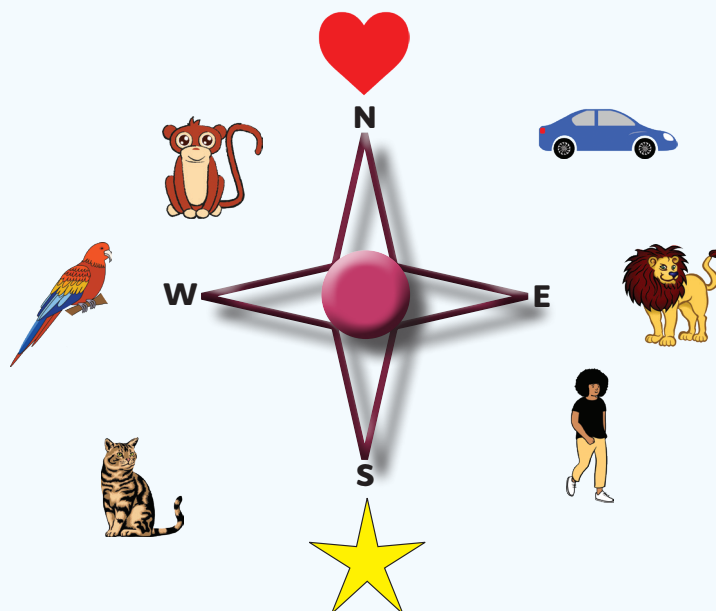
Example 3.29

Follow the instructions below.

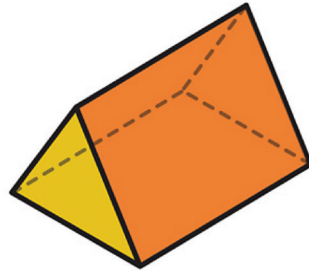


1. Put a heart in the North.
2. Put a star in the South.
3. Put a lion in the East.
4. Put a parrot in the West.
5. Put a monkey in the North West.
6. Put a boy in the South East.
7. Put a car in the North East.
8. Put a cat in the South West.

Solution



Triangular prism



Door stops and tents are examples of triangular prisms.

Properties:

- 5 faces (2 triangular and 3 rectangular)
- 9 edges
- 6 vertices

Prisms have two ends that are the same shape and size.

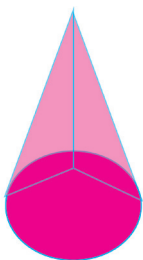
Exercise 3.21

Name the shapes.

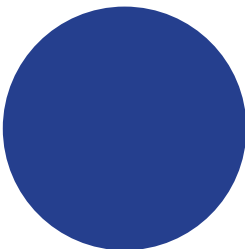
1.



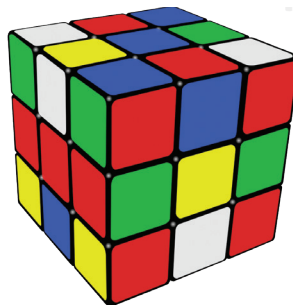
2.



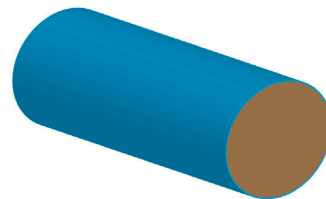
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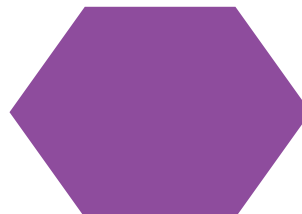
4.



5.



6.



Topic 4

Relationships

Data handling

Tables

A table is a figure widely used for representation of data or a quantity in the form of rows and columns.

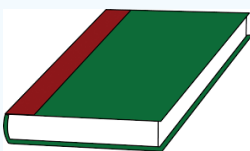


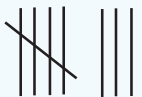



For example, it could be used to record the average scores in Mathematics of each section in a school or the temperature on different days of the week.

Type of flower	Amount planted
Rose	89
Daffodil	67
Pansy	109
Tulip	79

The table shows you the amount of flowers that were planted in a garden.

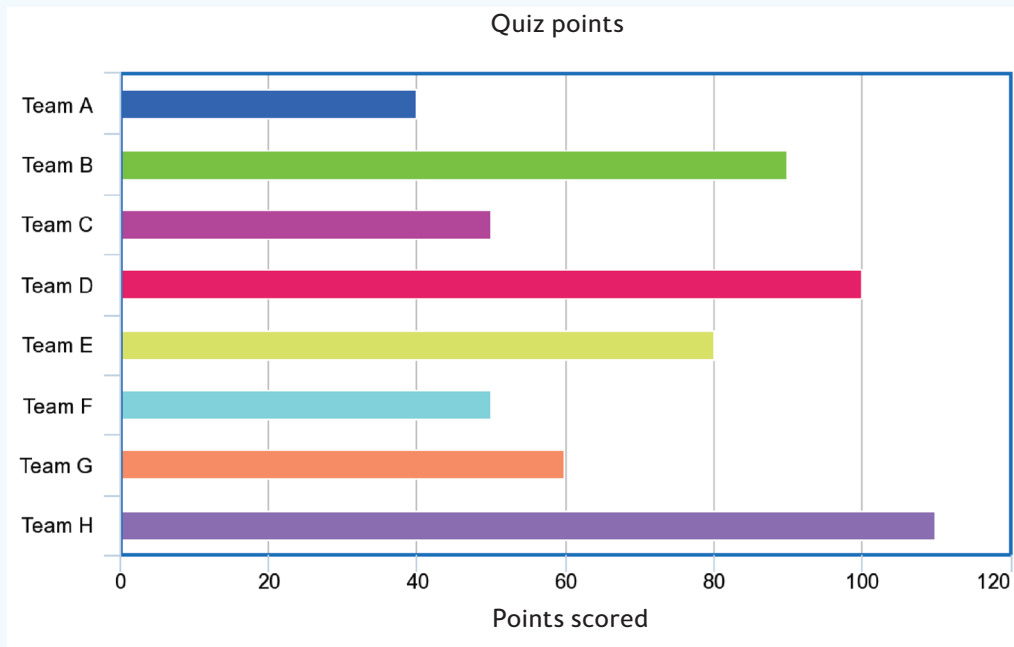
Example 4.1

Draw a table to represent the information below.

Example 4.3

Eight teams joined a quiz competition. Their final scores are shown below. Study the graph.



1. Which team won the contest?
2. How many points did Team F score?
3. How many more points did Team D get than Team G?
4. Which teams scored equally?
5. What is the difference in the amount of points Team E scored and the amount Team H scored?
6. How many teams scored fewer than 100 points?
7. List the teams with the most points.

Solution

1. Team H won the contest.
2. Team F scored 50 points.
3. Team D got 100 points. Team G got 60 points. Team D has 40 points more than Team G.
4. Team C and F scored equally.
5. Team E got 80 points. Team H got 110.
The difference = $110 - 80 = 30$

Examination practice 1

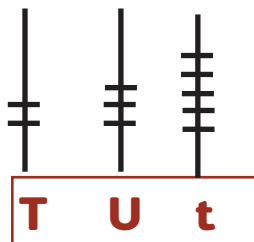
Mathematics

Paper 1

Time: 1 hour 30 minutes

Answer all questions.

1.



The number shown is _____.

- A. 235 B. 23,5 C. 2305 D. 2,35

2. The value of 6 in 50 680 is _____.

- A. thousands B. hundreds
C. units D. tens

3. 6 508 can be written as _____.

- A. 6 000 + 500 + 8 B. 6 000 + 500 + 80
C. 6 000 + 50 + 8 D. 600 + 50 + 8

4. Forty thousand six hundred and sixty-six in numerals is _____.

- A. 40 606 B. 46 666 C. 40 666 D. 4 066

5. A number sequence is given as 3; 6; 9; \square ; 15; 18; \square ; 24. The missing numbers are _____.

- A. 10 and 20 B. 12 and 22
C. 12 and 21 D. 12 and 20

6. The correct descending order of numbers is _____.

- A. 2 005 ; 2 035 ; 2 350 B. 2 035 ; 2 005 ; 2 350
C. 2 005 ; 2 350 ; 2 035 D. 2 350 ; 2 035 ; 2 005

7. Given the fraction $\frac{3}{5}$, 3 is the _____.

- A. numerator B. denominator
C. mixed number D. proper fraction

8. Insert the correct symbol in $\frac{2}{5} \square \frac{10}{50}$ to make the statement true.

- A. = B. < C. > D. /

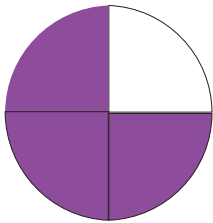
9. The equivalent fraction of $\frac{3}{5}$ is \square .

- A. $\frac{6}{100}$ B. $\frac{30}{100}$ C. $\frac{6}{10}$ D. $\frac{6}{50}$

10. $\frac{20}{50}$ reduced to its lowest term is \square .

- A. $\frac{10}{25}$ B. $\frac{4}{5}$ C. $\frac{3}{5}$ D. $\frac{2}{5}$

11.



The unshaded fraction is \square .

- A. $\frac{1}{4}$ B. $\frac{3}{4}$ C. $\frac{4}{5}$ D. $\frac{5}{10}$

12. $3\frac{3}{5}$ as an improper fraction is \square .

- A. $\frac{33}{5}$ B. $\frac{30}{5}$ C. $\frac{18}{5}$ D. $\frac{15}{5}$

13. LXV in Arabic numerals is \square .

- A. 60 B. 55 C. 65 D. 70

14. 20,96 to the nearest tenth is \square .

- A. 20,9 B. 21 C. 20,97 D. 20

15. 125 count on 68 is \square .

- A. 183 B. 193 C. 57 D. 67

16. $27 + (13 + 6)$ is \square .

- A. 19 B. 33 C. 46 D. 36

17. The sum of 2 099 and 796 is \square .

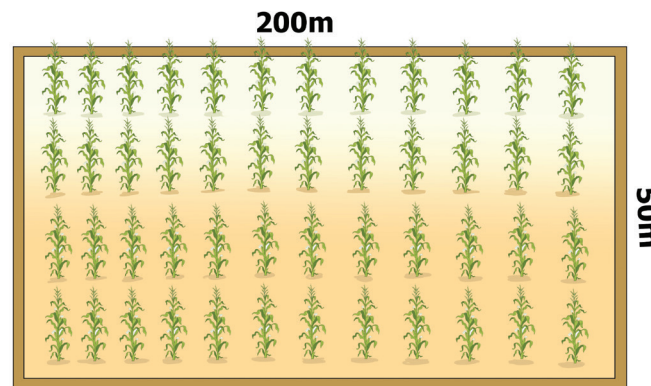
- A. 2 785 B. 2 895 C. 2 896 D. 1 303

18. A Grain Marketing Board Depot had 215 tonnes of maize. It sold 139 tonnes of maize. The number of tonnes left in the depot is ____.

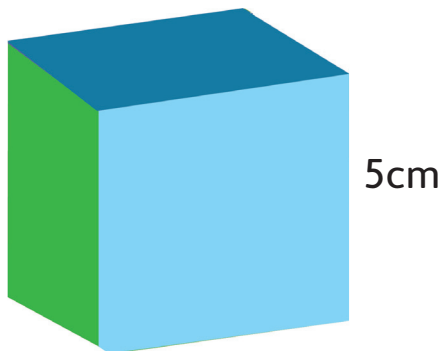


- A. 76 tonnes
B. 354 tonnes
C. 176 tonnes
D. 254 tonnes

32. A 3kg pack of macaroni costs \$7,50. Celesile paid \$10,00 for the item; her change is .
- A. \$3,50 B. \$2,50 C. \$2,00 D. \$3,00
33. Two fortnights is equivalent to ____.
- A. 14 days B. 10 days C. 28 days D. 30 days
34. 3,5kg is equivalent to ____.
- A. 3 500g B. 350g C. 3 050g D. 3 005g
35. A rectangular field measures 200m by 50m. Its perimeter is .



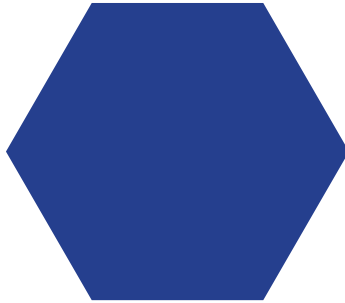
- A. 0,2km B. 0,25km
C. 1km D. 0,5km
36. The size of half of a complete revolution is a ____.
- A. right angle B. straight angle
C. quarter revolution D. turn
- 37.



The side of a cube measures 5cm. The volume .

- A. 25cm^3 B. 50cm^3
C. 100cm^3 D. 125cm^3

38. A polygon with six sides is called a _____.



- A. pentagon
- B. hexagon
- C. heptagon
- D. octagon

Use the table below to answer questions 39 and 40.

The table shows the information on shoe sizes worn by Grade five learners at a certain school.

Shoe size	1	2	3	4
Number of learners	8	6	3	2

39. The number of learners who wear sizes 2 and 3 is .

- A. 8
- B. 9
- C. 5
- D. 11

40. The total number of learners whose shoe sizes were recorded is .

- A. 20
- B. 10
- C. 19
- D. 8

Examination practice 1

Mathematics

Paper 2

Time: 1 hour 30 minutes

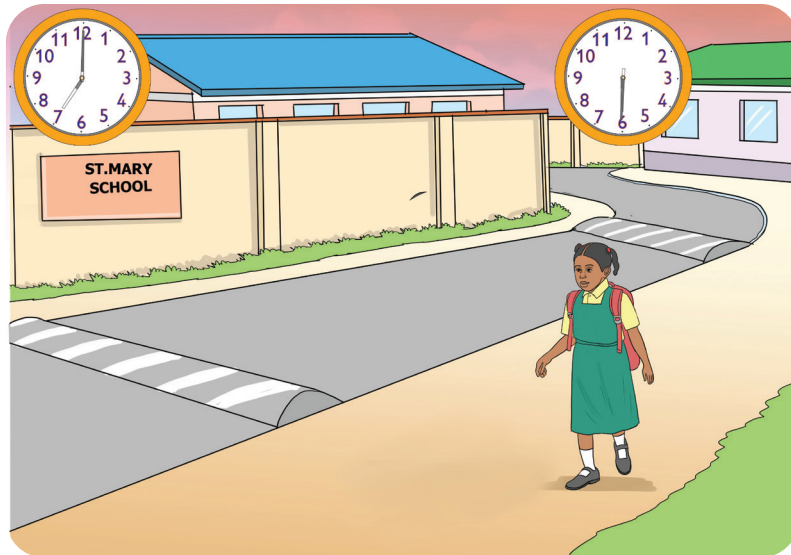
Section A [25 marks]

Answer all questions in this section.

1. (a) Write 34 099:
 - (i) in expanded form. [1]
 - (ii) to the nearest thousand. [1]
- (b) State the place value of 4 in 35,04. [1]
2. (a) Insert the correct sign in $\frac{4}{5} \square \frac{2}{10}$ to make the statement true. [1]
- (b) Arrange $\frac{1}{5}$; $\frac{1}{2}$; $\frac{1}{4}$ in ascending order. [2]
3. (a) Round off 15,95 to the nearest tenth. [1]
- (b) Express $\frac{40}{50}$ as a:
 - (i) fraction in its lowest term. [1]
 - (ii) percentage. [1]
4. (a) Find the sum of 1 308 and 986. [1]
- (b) An insurance company received 7 089 claims and managed to pay for 5 698 claims. Find the number of unpaid claims. [2]
5. (a) Find the HCF of 6 and 9. [1]
- (b) Find the value of $9,6 \div 0,3$. [2]
6. (a) Simplify $\frac{15}{20} - \frac{1}{4}$, leaving your answer as a fraction in lowest term. [2]
- (b) Find the exact value of 20% of 30kg. [2]
7. (a) Calculate the number of seconds in 5 minutes. [1]

- (b) Ruwadzano walks from home to school at 6.30am. She arrives at 7.00am. Calculate the time she takes to walk to school.

[2]



8. Jabulani weighs 30kg and Lerato weighs 25,5kg.

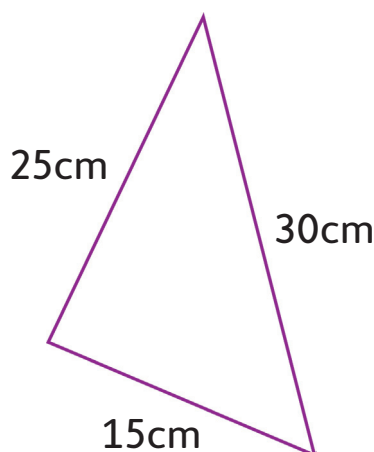


- (a) Find the difference between their mass in grammes. [2]
(b) Increase Jabulani's weight by 200 grammes. Express his weight in kilogrammes. [1]

Section B [15 marks]

Answer three questions from this section.

9. (a) Find the length of a side of a square whose perimeter is 60cm. [2]
(b) Study the diagram below.



Find the perimeter of the shape above. [3]

10. (a) Calculate the area of a square whose side has a length of 9cm. [2]
(b) Find the base of a triangle which has an area of 40cm^2 and a height of 20cm. [3]
11. (a) Name: [2]
(i) two plane shapes. [2]
(ii) two solid shapes. [2]
(b) Write down the name of a polygon with 8 sides. [1]
12. (a) Find the volume of a cube whose side is 7cm long. [3]
(b) Express the volume in (a) in millilitres. [2]

13. The table below shows the different sporting activities played by 80 learners at a school.

Sport	Soccer	Netball	Rugby	Tennis	Hockey
Number of learners	30	18	11	<input type="text"/>	15

- (a) Find the number of learners who play soccer and rugby. [2]
(b) Calculate the number of learners who play tennis. [3]

Examination practice 7


Mathematics

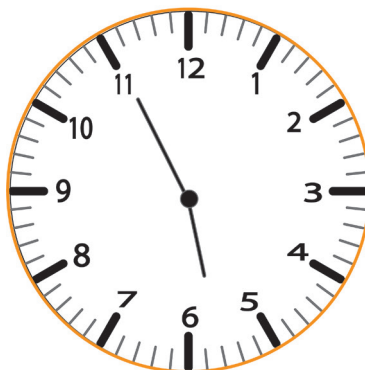
Paper 2

Time: 1 hour 30 minutes

Section A [25 marks]

Answer all questions in this section.

1. Write 79 000 in words. [1]
(b) Compare 6 148 \square 6 418 using $>$, $<$ or $=$. [1]
2. (a) Write down the shaded fraction represented below. [1]

(b) Reduce $\frac{4}{6}$ in its lowest term. [1]
(c) Arrange 65 000 ; 65 500 ; 65 005 ; 65 050 ; 60 050 in ascending order. [2]
3. Express 3 and $\frac{5}{6}$ as an improper fraction. [1]
4. (a) Simplify $30\,000 - 4\,943$. [2]
(b) Find the HCF of 27 and 54. [2]
(c) Express $\frac{3}{10}$ as a decimal. [1]
5. Simplify $\frac{1}{2}$ of \$93. [2]
6. (a) A wheelbarrow was marked \$250,45. A customer paid with \$300,00. Calculate the change. [2]
(b) Express 12.35am in 24 hour notation. [1]
(c) Write down the time on the clock face. [1]



(b) Simplify $\frac{4}{5} \div 4$. [2]

8. Express 85% as a fraction in its lowest terms. [2]

Section B [15 marks]

Answer three questions in this section.

9. Monique baked a cake during the weekend. She gave $\frac{1}{2}$ of the cake to her friends and $\frac{1}{3}$ to the visitors.



(a) Calculate the fraction already shared. [2]

(b) Calculate the fraction not yet shared. [1]

(c) If the cake had 12 equal pieces, calculate the number of pieces of the cake given to her friends. [2]

10. The calendar below shows the month of a year in 1980.

A month in 1980

Mon	Tues	Wed	Thur	Fri	Sat	Sun
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29				

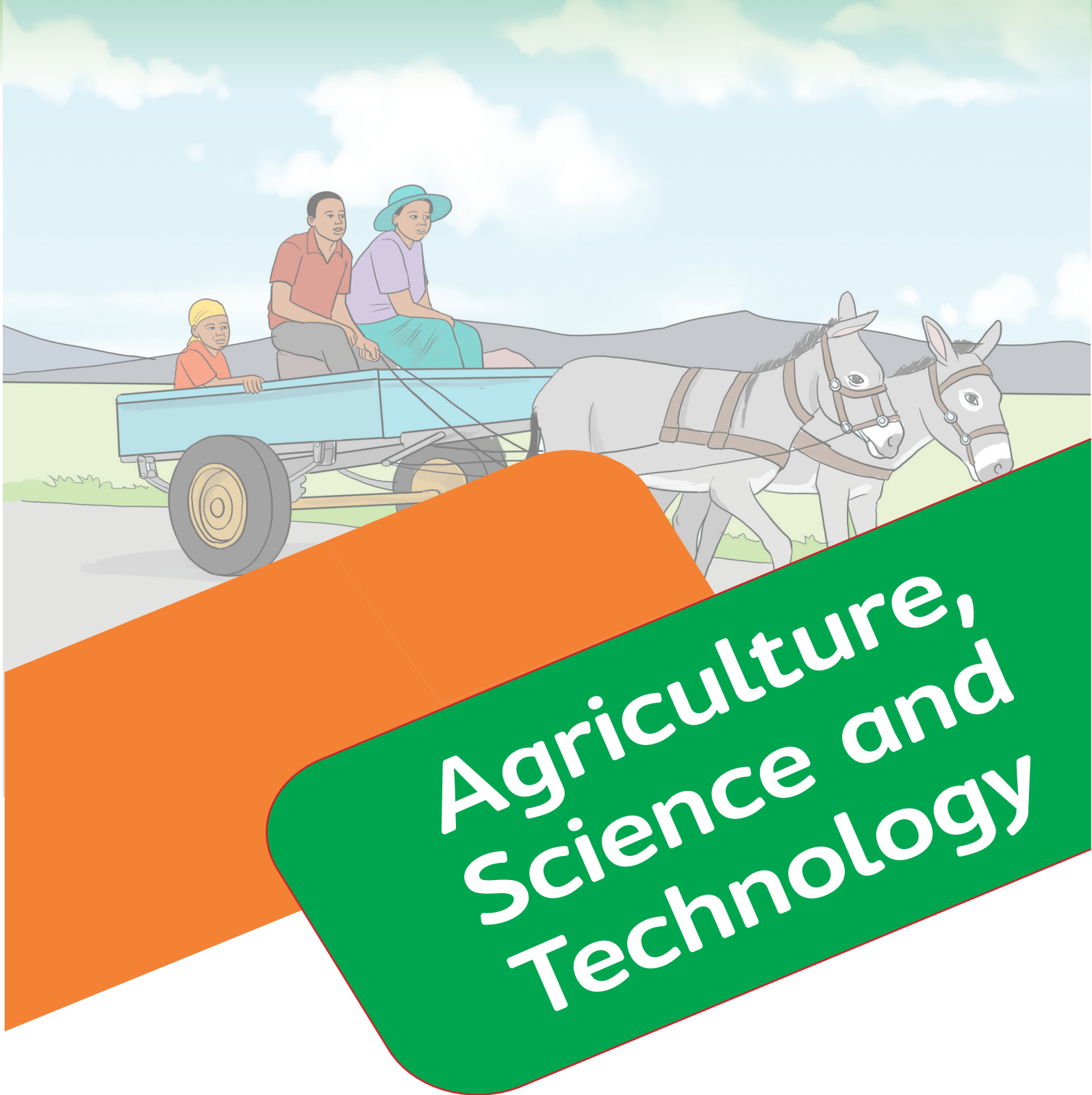
(a) Find out which month this is. [1]

(b) Calculate the number of weeks in this month. [2]

(c) Name the type of year this is. [1]

(d) From the answer in (c), find the number of days the year has. [1]

(e) Write down 29 February 1980 in SI notation. [1]



Development Editor: Martha Daka and Joseph Gomba

Authors: Never Mudzingwa, Martin Kunaka and Muzondo Susan

Topic 1

Introduction to agriculture and basic farm tools

Important notes and insights

Agriculture is important to the family because it provides:

- food such as meat, eggs, grain, oils, honey, fruits and vegetables.
- raw materials for industries and factories.
- materials for making clothes, for example, leather from animal hides, fur from sheep for wool, cotton from the cotton plant, pelts from rabbits.
- employment or jobs.
- building materials like timber.
- fuel, firewood or energy from forestry.
- beautification of the surroundings.
- clean environment, for example, trees clean up the air during photosynthesis.
- source of money from agricultural products in crop, tree and animal production. Families sell goats, poultry and other animals to raise money to buy food, clothes and pay school fees.

The table below gives examples of tools and classes they belong to.

Class of tools	Examples of tools in the class
Digging	spade, pick, hoe, mattock, dibber, hand trowel
Cutting	sickle, slasher, secateurs, scissors, machete, axe, saw.
Watering	watering can, hosepipe, bucket.
Spraying tools	knapsack sprayer.
Workshop	pliers, spanner, screw driver, hammer.

Note that: Do not include loan mower because this is a machine not just a simple tool.

Below are pictures of some tools that are used by farmers.

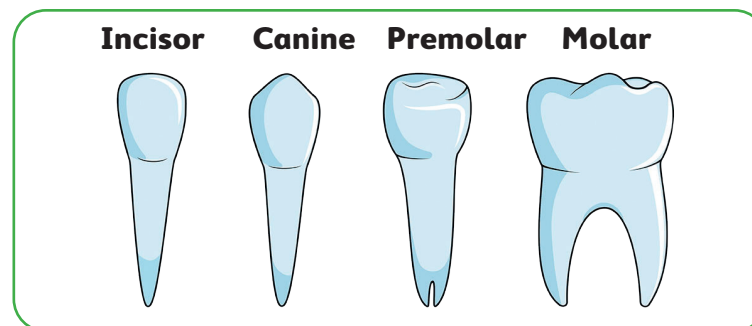


- The farmer should keep an inventory of farm tools to prevent losses and to decide on tools that need replacement, repair or purchase.
- Tools should be used for their correct purposes for safety and an extended lifespan of the tool.
- Farm tools and implements can cause injuries and accidents. Safe use of tools includes:
 - using each tool for its correct purpose.
 - the farmer avoiding using tools when they are too tired.
 - handling tools firmly.
- Efficient tools provide safety to the farmer.
- When working in teams with tools like slashers, space out to avoid injuring each other.
- Wearing protective clothes helps farmers to be safe when using tools, implements, machines and agrochemicals.
- All tools need to be used safely as any tool can be a source of harm.
- Handle hammers properly because the tool can slip from the hand and cause harm to the next person.

Important notes and insights

Human body

- Humans have different teeth which perform different functions. An adult human has 32 teeth.
- There are four types of teeth which are molar, incisor, canine and premolar. These teeth perform different functions.

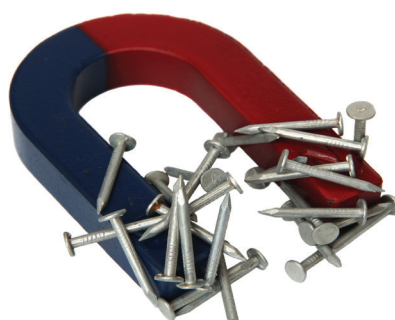
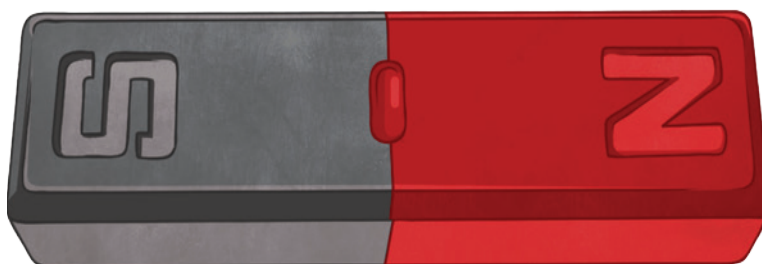


- Molar teeth are for grinding food.
- Canine teeth are for tearing food.
- Premolars teeth are for crushing food.
- Incisor teeth are for cutting food.
- Teeth should be taken care of to avoid tooth decay or tooth cavities.
- Tooth decay is caused by many factors which can include:
 - bacteria in the mouth from sugary food and drinks.
 - not brushing or flossing teeth regularly.
 - eating plenty of sugary food.
 - presence of plaque on teeth.
- Tooth decay and cavities can be prevented. Tooth decay is prevented by:
 - brushing teeth at least twice a day with a fluoride toothpaste.

Important notes and insights

Magnets

- Magnetic materials are materials that attract other metal objects towards them. Examples of magnetic materials include nickel, cobalt, steel and iron.
- Other objects that can be made using magnetic materials include spoons, forks, knives, needles and nails.



Magnets

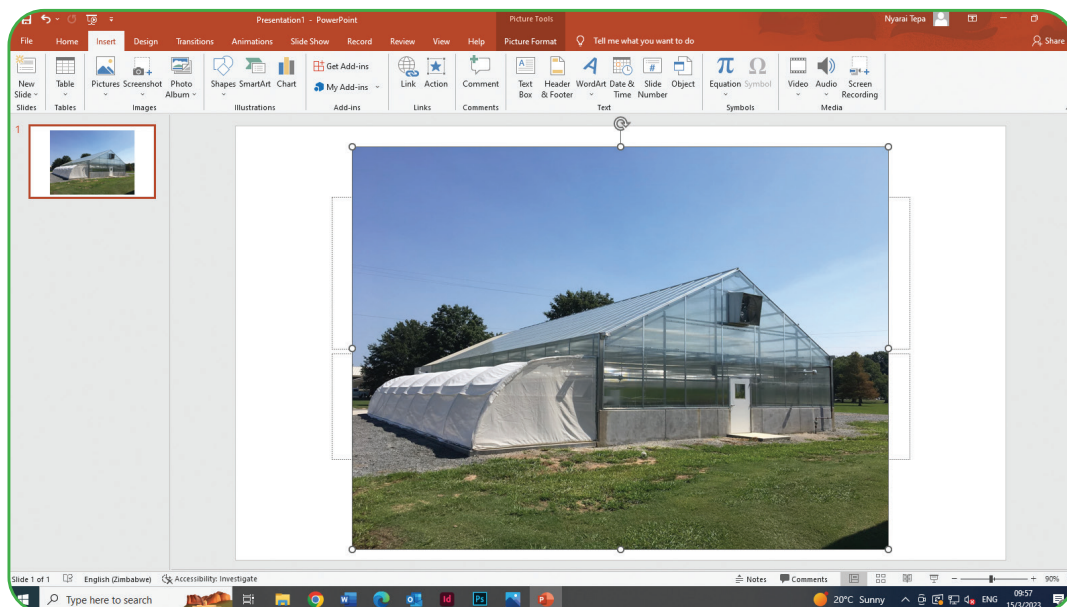
- Non-magnetic materials are materials that cannot attract any material or metal object towards them. Non-magnetic materials cannot be attracted by magnets. Examples of non-magnetic materials include rubber, plastic, paper, gold, silver, glass and copper.

Topic 21

Creating and publishing

Important notes and insights

- A presentation program is a software program that is used to create explanations and illustrations on a given topic using slides.
- Once a presentation has been created it is followed through by the presenter or creator in the form of a slide show on a big screen.
- Microsoft Office Powerpoint and Google slides are examples of presentation programs.
- Slide shows can be more interesting if they include images, videos, audios, transitions and animations.
- Using the insert menu, you can import or insert pictures, videos, audio and tables.



An image inserted into a slide

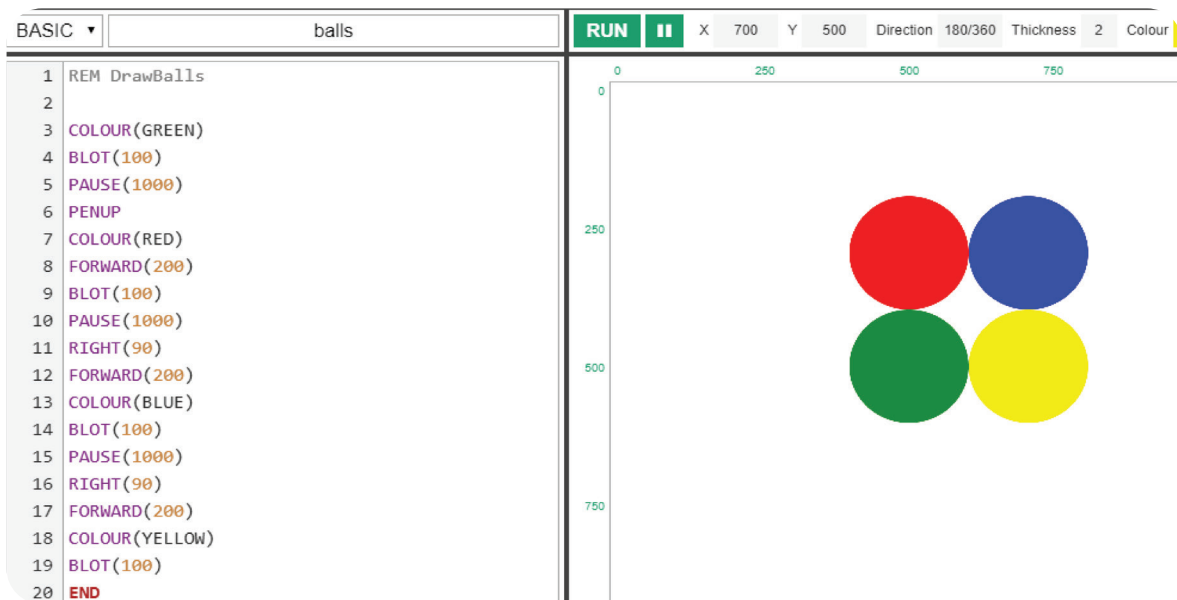
- Using the home menu, you can change the slide layout.

Topic 26

Programming

Important notes and insights

- Programming is the process of writing computer instructions.
- Software is a set of computer instructions and their associated documentation.
- A computer program is a set of software instructions that solve a particular user problem.
- You should be able to create your own applications using text and graphical based programming.



The screenshot shows a window titled 'balls' with a BASIC interpreter on the left and a graphical canvas on the right. The code in the BASIC window is as follows:

```
1 REM DrawBalls
2
3 COLOUR(GREEN)
4 BLOT(100)
5 PAUSE(1000)
6 PENUP
7 COLOUR(RED)
8 FORWARD(200)
9 BLOT(100)
10 PAUSE(1000)
11 RIGHT(90)
12 FORWARD(200)
13 COLOUR(BLUE)
14 BLOT(100)
15 PAUSE(1000)
16 RIGHT(90)
17 FORWARD(200)
18 COLOUR(YELLOW)
19 BLOT(100)
20 END
```

The graphical canvas on the right shows the result of the program: four circles (balls) arranged in a 2x2 grid. The top-left ball is red, the top-right is blue, the bottom-left is green, and the bottom-right is yellow. The canvas has a coordinate system with X and Y axes ranging from 0 to 750.

A program which draw balls using Turtle System Basic

- You can copy the above program and change parameters as you wish. You can change colours, radius, steps and turning angles.

Examination practice 4

Agriculture, Science and Technology

Paper 1

Time: 1 hour 30 minutes

Answer all the questions.

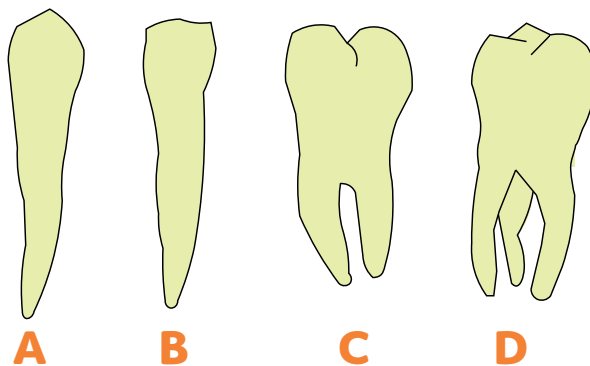
1. Study the tool below and answer the question that follows.



This is a _____.

- A. rake B. shovel C. garden fork D. spade
2. Open wells can be a source of hazards. Farmers can prevent hazards from these wells by _____.
- A. filling up the wells B. drilling boreholes
C. covering the wells D. making police reports
3. Which of the following tools is most suitable for cultivating in a seedbed?
- A. Hand fork B. Rake
C. Hoe D. Garden trowel
4. Farmers should _____.
- A. work in fields during a thunderstorm
B. stay indoors during a thunderstorm
C. plough the field during downpours
D. avoid work in cold weather

15. Apiculture is _____.
A. the growing of apples B. the keeping of pigs
C. the keeping of bees D. the growing of vegetables
16. Which of the following statements is true?
A. A cow produces less milk than a goat
B. A goat produces more milk than a cow
C. The milk from goats is unhealthy
D. A goat produces less milk than a cow
17. Which of the following animals produces wool?
A. Ox B. Pig C. Sheep D. Turkey
18. _____ pull carts and ploughs.
A. Sheep B. Goats C. Cattle D. Pigs
19. Forestry farmers need a/an _____.
A. milking machine B. incubator
C. chain saw D. drill
20. When selling vegetables, a farmer can scare away customers by _____.
A. being rude B. being friendly
C. being honest D. smiling
21. The diagram below shows human teeth.



Which type of teeth labelled A, B, C or D has the function of tearing food?

30. An advantage of using solar energy is that _____.
A. it is electricity that can be stored
B. it has very little voltage
C. people cannot control the amount of electricity produced
D. the amount of voltage is not affected by weather

31. Use the illustration below to answer the question below.



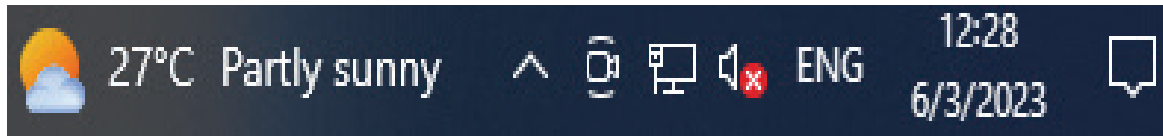
What kind of safety precaution does one need to observe when using the tool shown above?

- A. Use it for digging hard surfaces
B. Make sure that the handle is held firmly to prevent cuts
C. Use it while in a crowd
D. Allow other people to come close when using the tool
32. Which type of soil will one find more soil organisms?
A. Gravel B. Loam C. Sand D. Silt
33. The device shown below is _____.



- A. an input device B. a storage device
C. a output device D. a transfer device

34. Where are the following group of options found?



- A. Desktop
- B. Start menu
- C. Taskbar
- D. Menu bar

35. What is the name of the following button?



- A. Loop
- B. Next
- C. Back
- D. Pause


36. The following icon represent _____.



- A. lock
- B. key
- C. access
- D. password

37. Which computer part is used to record sound?

- A. Sound recorder
- B. Speaker
- C. Microphone
- D. Webcam

38.  The icon shown is found in a web page. What is the name of the icon?

- A. Menu button
- B. Close button
- C. Links button
- D. Home button

39. Where are deleted files temporarily stored before full removal from a computer?

- A. Documents folder
- B. Private folder
- C. Desktop
- D. Recycle bin

40. Under which group of options do you find layout options in MS PowerPoint?

- A. Insert
- B. Design
- C. Transitions
- D. Home

Examination practice 5

Agriculture, Science and Technology

Paper 2

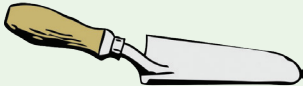


Time: 1 hour 30 minutes

Section A

Answer **all** questions in this section.

1. Complete the table below on tools and their uses.

(a)

Tool	Tool name	Use of the tool
(i) 	Garden trowel	_____
(ii) 	_____	levelling
(iii) 	Spade	_____

- (b) Name a tool used for clearing land. [3]

- (c) The wheel of a wheelbarrow is made from _____. [1]

2. (a) (i) Explain **one** hazard that can be caused by an open well at a farm. [1]

- (ii) What should farmers do to the well to prevent the hazard in (a)(i)? [1]




- (b) (i) Give **one** advantage of a dam as a source of water. [1]

- (ii) Identify **one** disadvantage of dams as a source of water. [1]

- (c) State **one** importance of water for a cattle farmer. [1]

3. (a) Complete the following table.

Months of the year	Season in which months fall in
(i) Mid-November to mid- March	_____
(ii) _____	Cool dry

- (b) The hottest season in Zimbabwe is called _____. [2]
- (c) Give **one** agricultural activity for the post rain season. [1]
- (d) In which season do most farmers irrigate their garden crops? [1]
4. (a) Give an example of a plant nutrient. [1]
- (b) One food source of proteins is _____. [1]
- (c) Which weather instrument is used to measure rainfall? [1]
- (d) State **one** characteristic of vertebrates. [1]
- (e) Give **one** use of plants. [1]
5. (a)  The icon is used to _____. [1]
- (b)  This icon is used to _____. [1]
- (c)  [1]
- (c) What is the name of the above icon? [1]
- (d) How do you save a file in MS Word? [1]
- (e) Why should you save your document before exiting a word processor? [1]

Section B

Answer any **two** questions from this section.

6. (a) A Grade 4 class visited an area that was badly affected by soil erosion.
- (i) What did the class observe? [1]
- (ii) Suggest what may have caused the erosion. [1]
- (b) A Grade 4 young farmer saw the letters N, P, K on a bag of

- fertiliser. Give the meaning of any of the letters. [1]
- (c) Why do farmers add fertiliser to the soil? [1]
- (d) Which soil component comes from broken down rock particles? [1]
7. (a) Name **one** cause of plant damage. [1]
- (b) What are indigenous trees? [1]
- (c) Ornamental plants can be trees, lawns or _____. [1]
- (d) A snout apple tree is an indigenous tree while a lemon tree is _____. [1]
- (e) Fruit trees are grown in a place called an _____. [1]
8. (a) Name **one** example of natural feed for cattle. [1]
- (b) Give an example of commercial feed for broilers. [1]
- (c) It makes honey and lives in a hive. Which insect is this? [1]
- (d) Compare natural feeds with artificial feeds for domestic animals. [1]
- (e) Why do farmers keep rabbits? [1]

Section C

Answer any **two** questions in this section

9. (a) State **one** example of a reptile. [1]
- (b) What is the name of the parasite that causes bilharzia? [1]
- (c) State any disease that is spread by being in contact with contaminated water. [1]
- (d) Use the diagram below to answer question **d(i)** and **d(ii)**.



- (i) Name the deficiency disease the woman is likely suffering. [1]

- (ii) Identify the nutrient that is lacking in her diet. [1]
10. (a) (i) People can reduce the effects of climatic hazards through _____. [1]
- (ii) How can a climatic hazard such as strong winds affect the environment? [1]
- (b) (i) What is an ecosystem? [1]
- (ii) Give **one** organism that lives in the soil. [1]
- (iii) What role is played by these organisms in the soil? [1]
11. (a) Which nutrient do we get from eating cereals? [1]
- (b) Give **one** advantage of eating food which has fibre. [1]
- (c) Name **one** characteristic of the winter season. [1]
- (d) (i) Give **one** external feature of fish. [1]
- (ii) Identify **one** function of the external feature given in (i). [1]

Section D

Answer any **one** question in this section.

12. Study the picture below and answer the questions that follow.



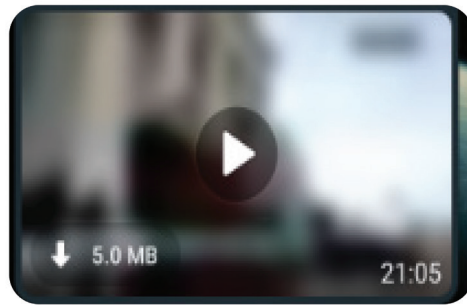
- (a) The device shown above is called a _____. [1]
- (b) What is the use of the device shown above? [1]



- (c) The device shown above is called a _____. [1]

- (d) What type of hardware device is the above shown device? [1]
- (e) What is hardware? [1]

13. (a) Saved links to frequently visited web pages in a web browser are called _____. [1]
- (b) Name **one** web browser. [1]
- (c) The screenshot below shows a file received through an instant messaging app.



- (i) What type of file is shown? [1]
 - (ii) How much storage space will the file occupy? [1]
- (d) Give **one** example of an instant messaging app. [1]

Examination practice 10

Agriculture, Science and Technology

Paper 2

Time: 1 hour 30 minutes

Section A

Answer **all** questions in this section.

1. Study the diagram below to answer the questions that follow.



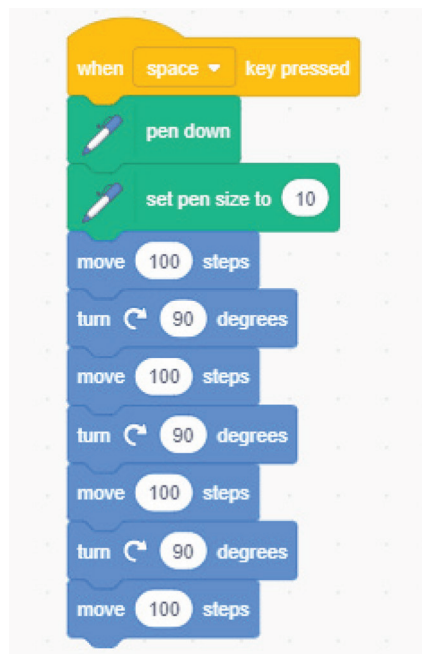
- (a) (i) Name vegetable Y. [1]
(ii) Which class of vegetables are X and Y? [1]
(iii) What is the planting time for the vegetables? [1]
(iv) Give the in-row spacing for vegetable X. [1]
(b) After harvesting, the farmer takes the vegetables to the market. What is a market? [1]

2. Study the insects in the picture below.



- (a) (i) Name the insects. [1]
(ii) The insects live in a _____. [1]
(iii) Compare these insects with other insects. [1]

- (b) A crate of eggs cost US\$6.00. Calculate the cost of 5 crates of eggs. [2]
3. (a) Name any tool that has a blade and a handle. [1]
- (b) Suggest **one** material suitable to make the blade of a garden tool. [1]
- (c) (i) Give **one** advantage of a wooden handle for a garden tool. [1]
- (ii) Explain **one** disadvantage of a wooden handle. [1]
- (d) List down **one** tool used for watering garden crops. [1]
4. (a) Identify **two** of Zimbabwe's natural resources. [2]
- (b) Which group of vertebrates:
- (i) are fish? [1]
- (ii) have feathers? [1]
- (c) State **one** characteristic of invertebrates. [1]



5. (a) Which event triggers the above program? [1]
- (b) What does the code block pen down do? [1]
- (c) What does the above program do? [1]
- (d) Which computer application was used to create the above program? [1]
- (e) Who creates computer software? [1]

- (c) Below is a farm machinery, use it to answer the following questions.

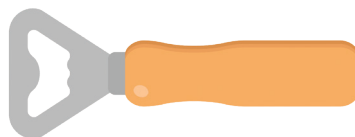


- (i) Name the machine. [1]
(ii) Identify any other farm machine. [1]
(iii) Machines make work _____. [1]

Section C

Answer any **two** questions from this section.

9. (a) One condition caused by not eating enough food nutrients is _____. [1]
(b) How can bilharzia be prevented? [1]
(c) The diagram of a structure below was built using which material? [1]



- (d) What does the following picture show? [1]



- (e) Name **one** magnetic material. [1]

ANSWERS TO MATHEMATICS EXERCISES

Exercise 1.1

1. thirty-six thousand and forty-five
2. twenty-three
3. three hundred and twenty-one
4. four thousand three hundred and twelve
5. 73 440
6. 3 953
7. 12 011
8. 4 67

Exercise 1.2

1. 15 ; 25 ; 40
2. 135 ; 138 ; 140 ; 141 ; 143
3. 25 ; 35 ; 50 ; 55
4. 100 ; 110 ; 140 ; 160 ; 170 ; 190
5. 129 ; 131 ; 134 ; 135 ; 137 ; 138

Exercise 1.3

1. 6th
2. 5th
3. 10th
4. 12th
5. first
6. third
7. tenth
8. second

Exercise 1.4

1. 3 - tens
2. 9 - hundreds
3. 6 - units
4. 9 - units
5. 1 - ten
6. 3 - units
7. 2 - units
8. 6 - units

Exercise 1.5

1. 3 thousand + 4 hundred + 6 tens + 2 units
2. 5 thousands + 7 hundreds + 8 tens + 4 units
3. 6 thousands + 2 hundreds + 3 tens + 3 units
4. 9 hundreds + 6 tens + 8 units
5. 3 000 + 400 + 60 + 2
6. 5 000 + 700 + 80 + 4
7. 6 000 + 200 + 30 + 3
8. 900 + 60 + 8

Exercise 1.6

- | | |
|------|-------|
| 1. > | 7. > |
| 2. = | 8. > |
| 3. > | 9. > |
| 4. < | 10. < |
| 5. < | 11. = |
| 6. > | 12. < |

AGRICULTURE, SCIENCE AND TECHNOLOGY EXAMINATION

PRACTICE PAPER 1 ANSWERS

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

AGRICULTURE, SCIENCE AND TECHNOLOGY PAPER 2 ANSWERS

EXAMINATION PRACTICE 1

SECTION A

1. (a) (i) rake
(ii) handle
(iii) spikes/ tines/ teeth
(iv) levelling the land/
clearing plant residue
(debris)/ covering
seeds after sowing
(b) rubber/ metal/ wood/
plastic
2. (a) (i) four
(ii) soil water/ soil air
(iii) organic matter
(b) clay
(c) sand
(d) the amount of nutrients in
the soil
3. (a) (i) meat/ milk/ wool/
eggs/ skins/ pelts
(ii) honey/ candle wax
(b) market
(c) school/ bus terminus/
clinic/ hospital/ local
store/ local market
(d) \$8.00
4. (a) scurvy/ kwashiorkor/
goitre/ night blindness
(b) (i) eating a balanced
diet

- (ii) eating food with
iodine
 - (c) shear food/ tearing food
 - (d) not brushing teeth/ eating
food with lots of sugar
5. (a) output device
(b) display port/ HDMI/ VGA
(c) palmtop
(d) it is portable/ simple
network set up/ powered by
rechargeable battery
(e) desktop computer

SECTION B

6. (a) sheep/ poultry/ donkey/
pig
(b) draft (draught) power/
manure/ food (milk, eggs,
meat)/ security/ source of
income (money)/ pets/ bride
price/ ritual ceremonies/
provide clothes
(c) natural/ commercial
(d) indigenous chickens/
broilers/ layers
(e) water/ shelter (housing)/
fresh air
7. (a) four
(b) hot wet/ post-rain/ cool
dry/ hot dry
(c) cool dry
(d) cool dry
(e) hot dry
8. (a) decoration (beautifying
the surroundings)/ source