MATHEMATICS ACTIVITIES

Grade R-9

This document is compiled by the Beyond Education program students of 2020.

Dear parents, guardians and learners.

This document contains activities compiled by Education Students, part of the Beyond Education Program of Stellenbosch University. The program was launched this year as part of the portfolio, 'Social Impact External', which forms part of the Education Student Committee (ESC). This program creates a platform for students to be active agents of social change.
We are all aware of the crisis we are currently facing. However, the Corona Virus pandemic brought several challenges forward; one of it is that our scholars are now losing valuable teaching and learning time, due to the National State of Restriction.

As education Students who are part of the BE Program, we have realized that the playing field is very uneven. Not everyone has the necessary learning material or even the internet to complete their academic year successfully. So we thought it good to put these sources together. The activities include the learning areas, Mathematics, Afrikaans and English.

We request that you, as parent (s) or guardian (s), support our learners throughout this period to remain academically stimulating. Also, share the activities with others so that they can be maximally distributed. Together we can overcome this!

Be Safe.

Marcel Adams
OSK/ESC (Social Impact-External portfolio manager.)
Beyond Education-program coordinator..

Contents

GRADE R

ACTIVITY 1

LESSON TOPIC: DATA HANDLING

Ask child/children to collect a certain number of items outside or inside the house.
Outside example: collect 4 leaves, 1 stone, 2 sticks and 3 pieces of grass.
Inside example: collect 2 spoon, 3 shoes, 1 toothbrush and 4 items of clothing.

ACTIVITY 2

LESSON TOPIC: MEASUREMENT

Ask child/children to use their hands, feet, shoes or any flat object to measure along the table or a drawn line. Using your feet as an example, place one foot at the start of the line. Place one foot in front of the other and count how many times you place your feet until the end of the line.

ACTIVITY 3

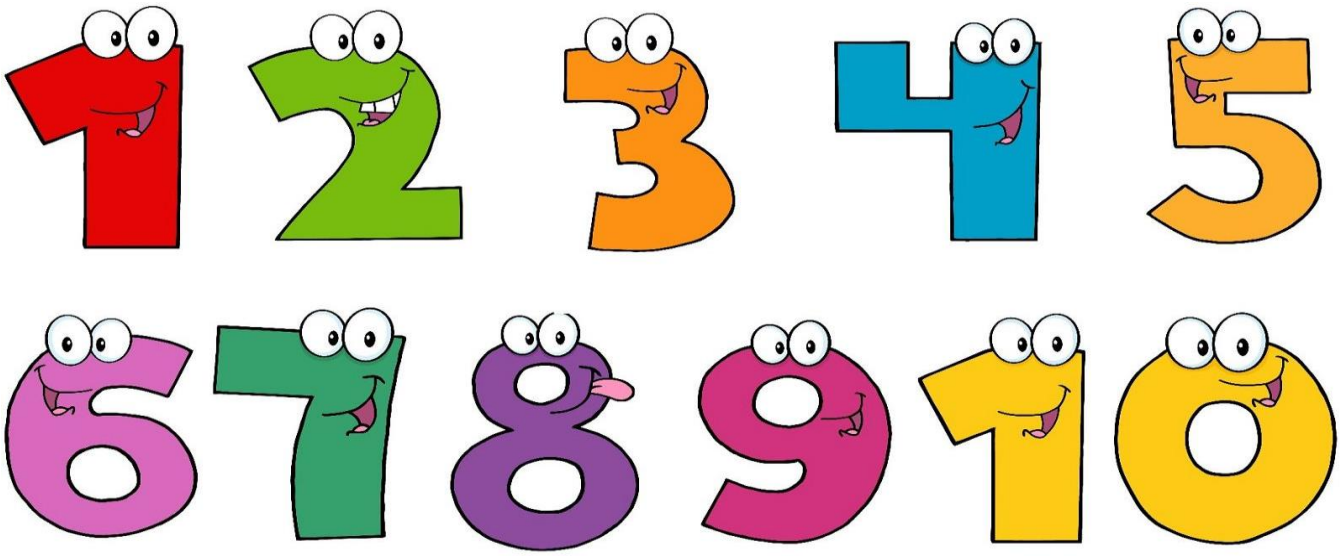
LESSON TOPIC: SORTING

Depending on your resources at home. Collect different fruits and vegetables from the kitchen and ask your child/children to sort the food into two groups of fruits and vegetables. If you are not able to source the above. Collect a few items (2+ per colour) of different coloured items and ask your child/children to sort the items according to colour.

ACTIVITY 4

LESSON TOPIC: COUNTING

Ask child/children to identify the numbers 1-10. Child/children should count from 1 to 10 and then count down backwards from 10 to 1.



ACTIVITY 5

LESSON TOPIC: COMPARING

Place 3 different size cups/beakers on the table and fill each cup with rice or water. Ask your child/children to sort the 3 cups/beakers from biggest to smallest. Using comparative words like big/small or empty/full will help your child/children identify the differences in size and capacity.

GRADE 1

ACTIVITY 1

LESSON TOPIC: RECOGNISE, IDENTIFY AND READ NUMBERS

- Write number symbols 1to10
- Recognise, identify and read number names 1 to 10
- Write number names 1 to10

Example:

Ask the child to write on a piece of paper the numbers 1-10.

Write on a piece of paper the number names and ask the child to identify the number names.

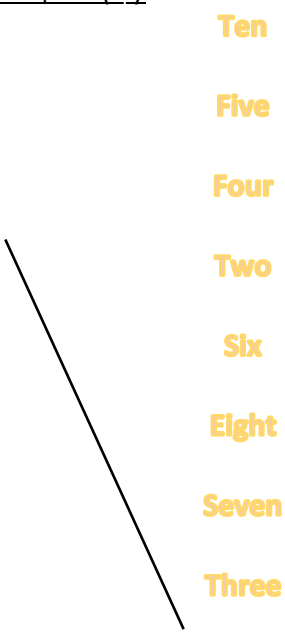
Once that is completed successfully ask them to write one to ten next to the correct number (keep in mind to only correct them once they have finished) **See example (a)**

Another way to test your child's knowledge is to write the numbers 1 to 10 on a paper and then write the wrong number name next to it and ask of the child to correct it by drawing a line from the number to the correct number name. See **example (b).**

Example (a)

1	One
2	Two
3	Three
4	Four
5	Five
6	Six
7	Seven
8	Eight
9	Nine
10	Ten

Example (b)



ACTIVITY 2

LESSON TOPIC: ADDITION

Full in the missing number to complete:

(The answer can just be written on a piece of paper)

1) 1+___=10

2) __+ 2 =10

3) 3 +__=10

4) __+ 4=10

5) 5 + 5 =__

6) 10 + 10 =____

7) 9 + ____= 10

8) ___+ 8 =10

9) 7 + ___=10

10) ___+ 6 =10

ACTIVITY 3

LESSON TOPIC: GREATER THAN, LESS THAN OR EQUAL

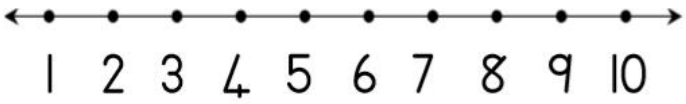
Can be answered on a piece of paper. Example: a) >

a 65 ◯ 18	b 57 ◯ 90	c 43 ◯ 29	d 99 ◯ 97
e 12 ◯ 24	f 11 ◯ 11	g 20 ◯ 30	h 31 ◯ 28
i 16 ◯ 78	j 90 ◯ 71	k 15 ◯ 76	l 23 ◯ 29
m 87 ◯ 78	n 12 ◯ 45	o 28 ◯ 39	p 10 ◯ 11

ACTIVITY 4

LESSON TOPIC: COUNTING ON OR BACK FROM A GIVEN NUMBER

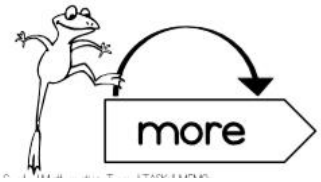
DO NOT TALK ABOUT PLUS AND MINUS, RATHER SAY MORE THAN OR LESS THAN.



1 more than 2= ..... 2 more than 5 = ...

1 less than 3= ..... 1 more than 1 = ...

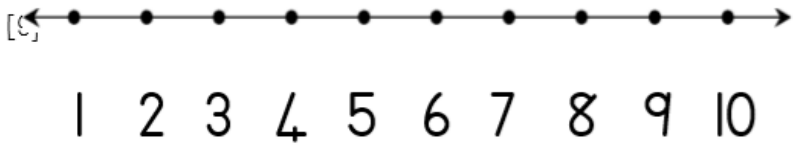
2 more than 4= ..... 2 less than 5= .....



ACTIVITY 5

LESSON TOPIC: BEFORE,BETWEEN,AFTER

Fill in the number that comes before, between or after the given number.



before	between	after
....., 2	1, ..., 3	3, ...
....., 4	5, ..., 7	5, ...
....., 7	8, ..., 10	8, ...

GRADE 2

ACTIVITY 1

Question 1

Write the number symbol of the following:

1. Twenty-seven …
2. Twelve …
3. Forty-one …
4. One hundred and fifty-two …
5. Two hundred …

Question 2

Write the following numbers out in words:

1. 4:
2. 89:
3. 114:
4. 55:
5. 199 …

Question 3

Write the next three numbers of the following patterns:

1. 10; 9; 8; 7; 6; 5 …
2. 2; 4; 6; 8; 10 …
3. 50; 45; 40; 35; 30 …
4. 9; 12; 15; 18; 21 …
5. 200; 190; 180; 170; 160 …

ACTIVITY 2

Question 1

1. Order the following numbers from smallest to biggest:

a. 152; 12; 80; 2; 7; 44; 69
b. 99; 33; 65; 14; 31; 75

2. Order the following numbers from biggest to smallest:

a. 3; 44; 32; 89; 156; 77
b. 45; 67; 13; 8; 99; 160

Question 2

1. What is half of 24?
2. What is double 5?
3. What is half of 30?
4. What is half of 6?
5. What is double 4?

Question 3

1. It is Johnny's 8th birthday and he invited 20 of his friends to his birthday party that afternoon. If Johnny's mom baked 50 cupcakes and Johnny gives one cupcake to each of his friends; how many cupcakes will Johnny have left over?

2. Amanda gave Johnny 5 tennis balls for his birthday. Chloe also gave Johnny tennis balls for his birthday. After the party, Jonny counted that he had 14 new tennis balls. How many tennis balls did Chloe give Johnny?

3. If Bryan drinks 3 glasses of milk each day, how many glasses of milk does Bryan drink in a week?

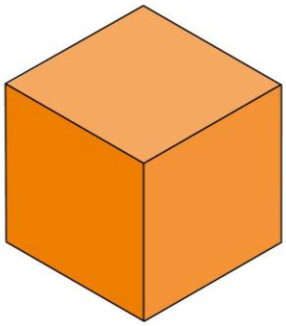
4. There are 5 dogs playing together in the park. How many legs are there in total?

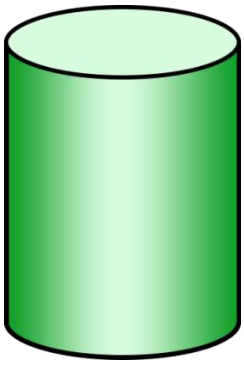
5. Sophie brushes her hair every morning. How many times will Sophie brush her hair in 4 weeks?

ACTIVITY 3

Question 1

What is the name of the following shapes?





Question 2

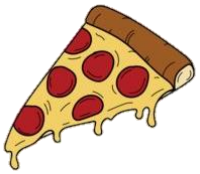
1. Write the days of the week in the correct order
2. Write the months of the year in the correct order
3. What is the time on the following clocks?

ACTIVITY 4

Question 1

1. Place the following objects in order from lightest to heaviest.

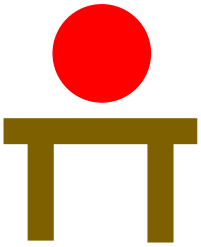
Bricks Slice of pizza Feathers House

Question 2

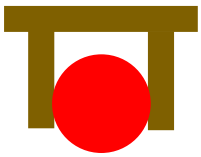
Describe the position of the ball when compared to the table. E.g. the ball is behind the table.

1.



The ball is … the table.

2.



The ball is … the table

3. 

The ball is … the table

Question 3

Write the next 5 numbers in the following patterns:

1. 5; 10; 15; 20 …
2. 30; 33; 36; 39 …
3. 40; 38; 36; 34 …

ACTIVITY 5

Question 1

Write the following numbers out in words:

1. 109
2. 37
3. 88
4. 44
5. 126

Question 2

1. Josh works on a farm. On Monday he picks 30 potatoes. On Tuesday he picks 42 potatoes and on Wednesday he picks 74 potatoes. How many potatoes does Josh have at the end of Wednesday?

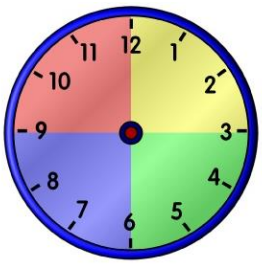
2. Emma went to the pet store and bought a gold fish for R20. Emma's little brother bought a hamster for R15. Emma's older sister bought bird for R50. How much money did Emma and her siblings spend?

3. Daisy wanted to do 50 jumping jacks in one day. She did 10 jumping jacks after breakfast and 25 after lunch. How many jumping jacks does Daisy still have to do?

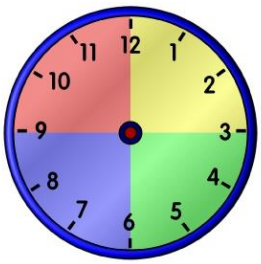
Question 3

Complete the time in the following clocks:

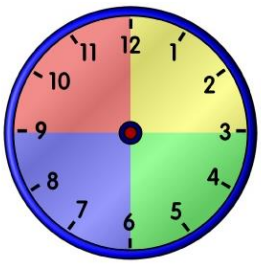
1. Half past four



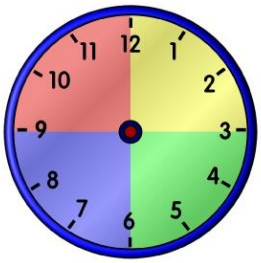
3. Eleven o'clock



2. Quarter to ten



4. Quarter past twelve



GRADE 3

ACTIVITY 1

LESSON TOPIC: OPERATION SYMBOLS

Write the two operation symbols (+ and –) on a piece of paper and take a few colour pencils.

• When we count altogether, then we add. (Put the colour pencils together and count how many there are altogether. When we count altogether, then we add.

• So, adding means putting everything together to find the total.

• What is the symbol for addition? (+) write the symbol of addition in the air.

• Add 49 and 34. Show the working on your piece of paper. (49 + 34 = 83)

• What do we do when we subtract? (We take away from a given number.)

• What is the symbol for subtraction? (–) Write the symbol of subtraction in the air.

• Subtract 51 from 87. Show the working on your paper. (87 – 51 = 36)

• Place value comes into play when you add and subtract. You have to start adding/subtracting from the units position in the number.
The units work together and the tens work together, but sometimes we have to 'carry' or 'borrow' depending on the numbers in the question.

ACTIVITY 2

LESSON TOPIC: WORD PROBLEMS

Read and answer each question on your own paper.

Charlie and his father, an engineer, decided to build a treehouse in their backyard.

1. In order to start constructing the house, Charlie and his father needed to gather some wood from the forest. If they already have 15 extra planks of wood in the house and Charlie and his father got 10 planks of wood each, how many pieces of wood do they have in total?

2. While building the house, Charlie noticed that they were running out of nails sohe told his father he's going to buy some. If they still have 9 nails left and Charlie bought 2 boxes of nails, the big one containing 55 nails and the small one containing 31, how many nails will they have?

3. To have a more stable treehouse, Charlie's father decided to tie the corner posts of the house to the tree itself. He used 24cm of rope for the first post, 20cm on the second, 14cm on the third and 12cm on the fourth. How many cm of rope was used?

4. The treehouse is almost done; all they need is to paint it. His father estimated that they will use 20 litres of white paint, 15 litres of green paint and 34 litres of brown paint. How many litres of paint would they buy in total?

5. Upon finishing the treehouse, Charlie's mother served them freshly baked cookies. If Charlie ate 15 cookies, his father ate 10 and his mother only ate 5, please write a sum to show how many cookies were eaten in total?

ACTIVITY 3

LESSON TOPIC: SUBTRACTION

1. 69 - 40 =

2. 89 - 60 =

3. 63 - 40 =

4. 69 - 10 =

5. 79 – _____ = 19

6. 97 – _____ = 7

7. _____ – 10 = 12

8. 93 – _____ = 13

9. _____ – 70 = 8

10. _____ – 20 = 45

11. 50 – _____ = 30

12. _____ – 20 = 68

13. 692 - 20 =

14. 509 - 60 =

15 496 - 90 =

16. 194 - 10 =

ACTIVITY 4

LESSON TOPIC: ADDITION AND SUBTRACTION WITH OBJECTS

Play with different kind of objects in the house and add and subtract them.

For example take 5 potatoes and add 3 carrots = 8 objects **Or**

6 oranges minus 2 apples = 4 fruits.

Play around and have fun with adding and subtracting objects around the house for about 30 minutes. Be creative!

ACTIVITY 5

LESSON TOPIC: ADDITION

1. 54 +_ = 61

2._ + 7 = 20

3. 76 + _= 81

4. 14 + _= 20

5._ + 6 = 85

6. 81 + 9 =

7. 59 + 6 =

8. _+ 9 = 30

9. _+ 9 = 26

10. 72 +_ = 81

11. 69 + 8 =

12._ + 5 = 31

13. 84 + 8 =

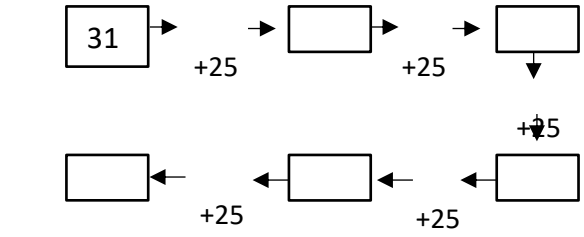
14._ + 9 = 151

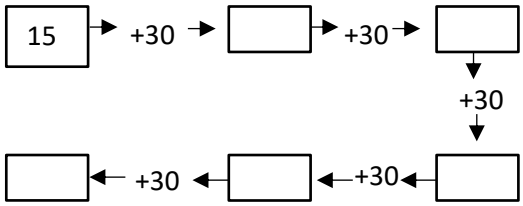
GRADE 4

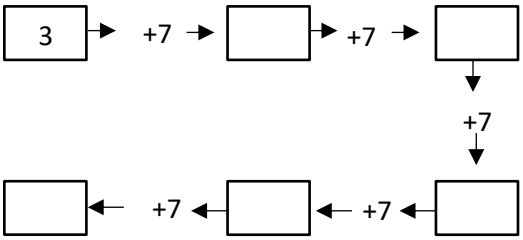
ACTIVITY 1

LESSON TOPIC: ADDITION IN DIAGRAMS

Complete the following diagrams by following the instructions:



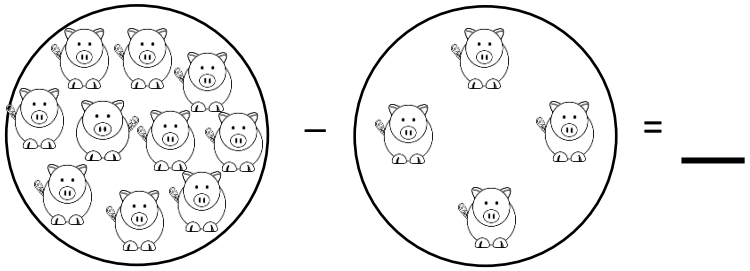




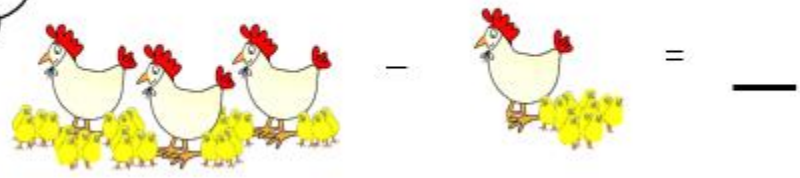
ACTIVITY 2

LESSON TOPIC: SUBTRACTION IN DIAGRAMS

Using the diagrams below complete the sums:



Calculate the baby



ACTIVITY 3

LESSON TOPIC: ADDITION AND SUBTRACTION CALCULATIONS

1. 20 + 20 =
2. 268 - 268 =
3. 28 + 0 =
4. 500 - 0 =
5. 2 + 8 =

6. 13 + 7 =
7. 20 - 17 =
8. 15 + 25 =
9. 20 – 7 =
10. 16 + 4 =

11. 15 + 15 =
12. 16 + 14 =
13. 30 – 20 =
14. 25 – 5 =
15. 37 – 3 + 3 =

16. 27 + 6 – 6 =
17. 20 + 10 – 10 =
18. 12 – 3 + 3 =
19. 34 + 5 – 5 =
20. 18 – 2 + 2 =

21. 306 - _ = 306
22. 8 + _ = 10
23. 10 - _ = 6
24. 3 + _ = 10
25. 20 + _ = 20

26. 30 + _ = 50
27. 80 + _ = 100
28. 40 - _ = 20
29. 35 - _ = 20
30. _ + 1 = 10

ACTIVITY 4

LESSON TOPIC: MULTIPLICATION

1. **Complete the following times tables:**

	1	2	3	4	5	6	7	8	9	10
X 6	6	12			30					60

	1	2	3	4	5	6	7	8	9	10
X 4				16			28			40

	1		3	4		6	7	8		10
X 2		4			10				18	

	1	2	3	4	5	6	7	8	9	10
X 9										

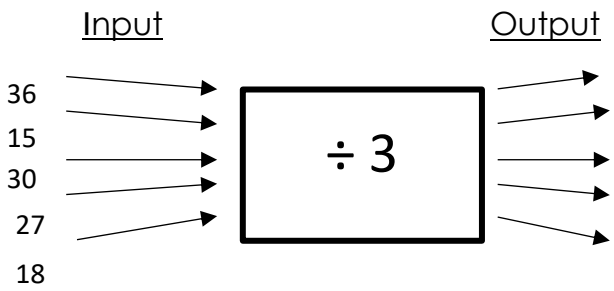
	1	2	3	4		6		8	9	10
X 3	3				15		21			30

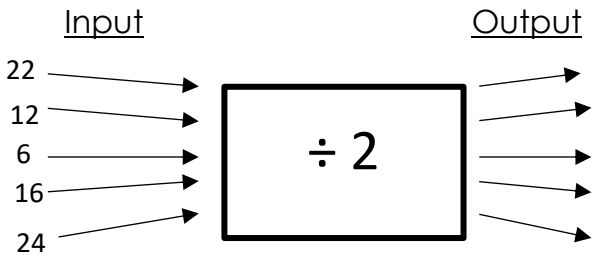
	1	2	3	4	5	6	7	8	9	10
X 7										

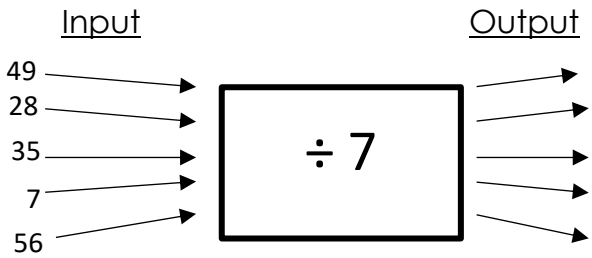
ACTIVITY 5

LESSON TOPIC: DIVISION

Complete the spider diagrams with your great dividing skills:







Grade 5

ACTIVITY 1

Question 1

Round the following numbers to the nearest (1) ten (2) hundred (3) thousand

(a) 789 324

(b) 528 738

(c) 501 103

(d) 441 160

(e) 287 564

(f) 487 923

Question 2

Count in four hundreds from 40 800 until you reach 45 200. Write down the number symbols as you go along

Question 3

Copy this number grid and complete it. You have to count in 2 250s to do this

9 000	11 250	13 500	15 750	
20 250				
	33 750			40 500
42 750				
	56 250		60 50	

Question 4

Arrange these numbers in ascending order (from smallest to biggest).

66 152 98 987 95 923 98 899
21965 47 677

Arrange these numbers in descending order (from biggest to smallest).

27 180 65 153 20 122 20 121 31 999
31 001

The seven numbers below are all bigger than 600 000 but smaller than 700 000. Arrange these numbers in ascending order.

641 245 662 786 680 901 646091 656 488 673 168
637 173

Question 5

In each case, decide whether the first number is bigger than, smaller than or equal to the second number. Then write the two numbers with the < or > or = sign between the numbers. Examples: 63 372 < 64 372; 45 871 > 20 200; 17 081 = 17081

(a) 63 372 and 63 002

(b) 86 762 and 68 872

(c) 27 901 and 28 817

(d) 35 530 and 53 305

(e) 390 860 and 390860

(f) 701 847 and 710 874

Question 6

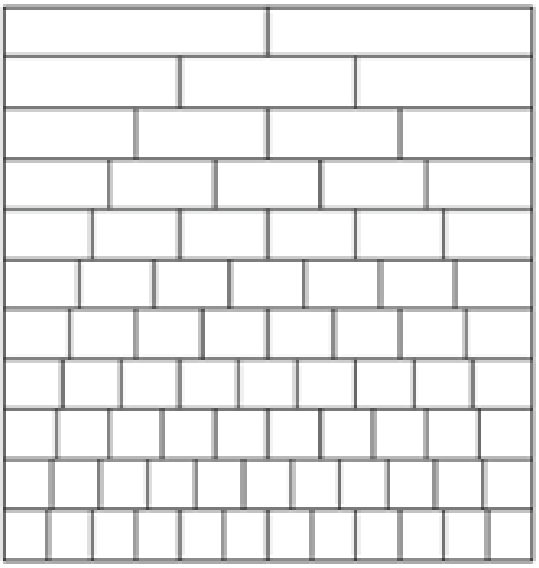
Calculate.

(a) 34 362 + 52 653 =

(b) 28 638 + 47 287 =

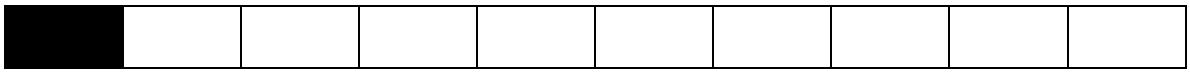
ACTIVITY 2

LESSON TOPIC: FRACTIONS

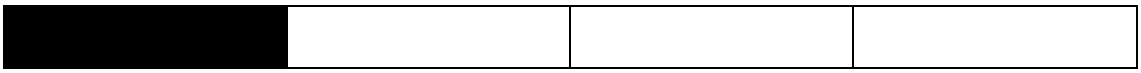


Question 1

1. How do we write this in fraction notation?



2. How do we write this in fraction notation?



Question 2

Which is more milk, or are the two volumes the same? Write your answers using the >, < and = signs.

(a) $\frac{1}{4}$ ℓ milk or $\frac{1}{5}$ milk

(b) $\frac{1}{4}$ ℓ milk or $\frac{2}{8}$ ℓ milk

(c) $\frac{3}{10}$ ℓ milk or $\frac{3}{8}$ ℓ milk

(d) $\frac{4}{5}$ ℓ milk or $\frac{8}{10}$ ℓ milk

Question 3

Which weighs more, or is the mass the same? You may find the diagrams useful.

(a) $\frac{6}{8}$ kg copper or $\frac{5}{7}$ kg copper

(b) $\frac{2}{7}$7 kg copper or $\frac{3}{8}$ kg copper

(c) $\frac{5}{7}$ kg copper or $\frac{7}{10}$kg copper

(d) $\frac{9}{15}$ kg copper or $\frac{3}{5}$ kg copper

Question 4

Mrs Faku has two sons. When she gives them cookies to eat, she gives two cookies to the older son for every one cookie that she gives to the younger son.

(a) What fraction of all the cookies that she gives them does each of the sons get?

(b) If she gives them 36 cookies in total, how many cookies does each son get?

Question 5

There are 15 people at a party and 5 milk tarts. Thulisile eats $\frac{1}{4}$ of a milk tart. Is that more or less than her fair share? Explain your answer.

Question 6

72 learners are divided equally into three classes. Each class has its own classroom. What fraction of all the learners are in each of the classrooms?

Question 7

A mother shares the peaches that she bought equally among her four children. What fraction of all the peaches does each of the children get?

Question 8

Pienie uses about 2 fifths of one small block of butter to bake one batch of rusks. How much butter does she need for four batches of rusks?

ACTIVITY 3

LESSON TOPIC: DISTANCE

Question 1

Which will you use if you have to measure the length of each of the objects below: millimetre, centimetre, metre or kilometre?

(a) the height of one of your classmates

(b) the length of your pencil

(c) the distance between two towns

(d) the height of a wall of a building

(e) the width of your fingernail

Question 2

(a) How would you convert centimetres to metres?

(b) How would you convert millimetres to centimetres?

(c) How would you convert millimetres to metres?

(d) How many centimetres are there in 5 m?

(e) How many millimetres are there in 6 cm?

(f) How many millimetres are there in 9 m?

Question 3

Complete by writing the length in the given unit.

(a) 10 cm = _mm (b) 300 mm = _ cm (c) 100 cm = _ mm

(d) 20 mm = _cm (e) 180 cm = _mm (f) 600 mm = _ cm

Question 4

Copy and complete the tables below

(a)

mm	4 000			2 000		1 000
cm	400	800				
m	4		6		9	

(b)

mm			5 000			75 000
cm		300		600		
m	12				9	

Question 5

Researchers fitted a tracking collar around a leopard's neck to find out how big his hunting ground is. In the first week, the leopard covered a distance of 42 km and 499 m. In the second week, his distance was 59 km and 504 m, and in the third week, 82 km.

a) How far did the leopard walk in these three weeks? Give your answer in km and m.
b) What is the difference between the longest and shortest distance that the leopard walked?

Question 6

The yard animals are holding an endurance competition to see who can cover the biggest distance in one hour. Snail starts and covers 746 cm. Sparrow (he is not allowed to fly) has the shortest legs and moves five times further than Snail. Hen does double the distance of Sparrow and Scottish Terrier travels 36 times farther than Snail.

a) Write down the distance that each of the animals travelled. Write your answer in cm, and in m and cm.
b) Arrange the distances in ascending order (from shortest to longest).
c) Write the distance that Snail moved in mm.

ACTIVITY 4

LESSON TOPIC: MULTIPLICATION

Question 1

Complete the table.

×	2	4	8	3	6	5	10	9	7
10									
50									
90									
80									
40									
20									
30									
60									
70									

Question 2

Calculate each of the following.

(a) 563 × 7 = (b) 6 × 378= (c) 362 × 9 = (d) 8 × 623 =

Question 3

One hotel has 238 rooms. How many rooms are there in 7 such hotels?

Question 4

At a large wedding reception, 8 guests sit at one table. How many guests are at the wedding reception if 156 tables are fully occupied?

Question 5

Calculate the following.

(a) 384 × 76= (b) 64 × 328= (c) 374 × 42 =
(d) 419 × 56 =

ACTIVITY 5
LESSON TOPIC: PATTERNS

Question 1

Zubeida uses this growing pattern of triangles of different lengths as a border pattern to decorate different lengths of walls

Length 1 Length 2 Length 3 Length 4

(a) Describe Length 5 in words.

(b) Now draw Length 5.

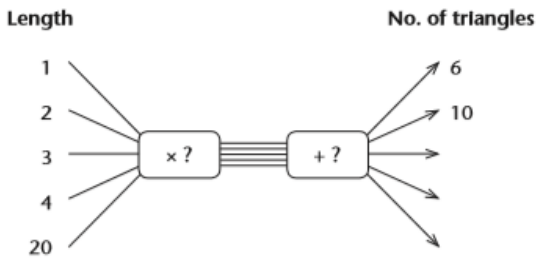
(c) How many triangles are there in Length 5?

Question 2

Complete this table. Describe and discuss your methods. Describe and discuss patterns in the table.

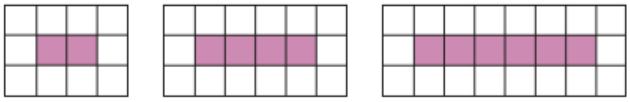
Length	1	2	3	4	5	6	7	60
No. of black triangles	2	4	6					
No. of blue triangles	4	6						
Total no. of triangles	6	10						

Question 3



Question 4

Purple tiles and white tiles are arranged to make this growing geometric pattern:



Size 1 Size 2 Size 3

Complete the table

Size	1	2	3	4	5	6	30
No. of purple tiles	2	4	6				
No. of white tiles	10						
Total no. of tiles	12						

GRADE 6

ACTIVITY 1

Question 1

Adding, subtracting and multiplying columns

	X4	X2	X10
3			240
10		80	
152	608		

	-30	-52	-100
1 242 508	1 242 478		
678 760		678 678	
245			63

	+8	+45	+1000
6		59	
6700	6708		
999 847			1 000 000

Question 2

Arrange numbers from smallest to biggest

8976 4 2009 34456

567234 6 18 300

Question 3

Arrange numbers from biggest to smallest

8 6753 568 90

45 7 980345 34

Question 4

Fill in the missing number:

1. 417 340 → ? → 417 350
2. 3 → ? → 9 → 12 → ? → 18
3. 20 → ? → 30 → ? → 40
4. 9 → 99→ ? → 9999

Question 5

Indicate which numbers is greater or smaller (< or >)

1. 2 ___ 3
2. 78 ___ 90
3. 56 ___ 65
4. 110 ___ 101

ACTIVITY 2

Question 1

Divide to form decimal fractions
56 ÷ 10 =

234 ÷ 1000 =

Question 2

Multiply to form whole numbers
0, 2 X ___ = 2

0, 02 X ____ = 20

0,002 X ____= 200

Question 3

Number sentences

a) 12 ÷ (4+2) X 5 =

b) (23 – 7) X (8 – 4) =

c) (88 ÷ 4) – (88 ÷ 11) =

Question 4

Commutative property of multiplication

3 x 9 = ____ = 9 x ___

5 x 6 = ____ = 6 x ___

7 x 4 = ____ = 4 x ___

11 x 2 = ____ = 2 x ___

10 x 12 ____ = 12 x ___

Question 5

Multiplying by ten, hundred and thousand

	X 10	X100	X1000
6			
65			
342			
0,2			
1,45			
0,035			

ACTIVITY 3

Question 1

Circle the prime numbers:

2, 3, 4, 5, 7, 11, 12, 13, 15, 17, 18, 19, 21, 22, 23, 26, 27, 29, 30, 31, 35, 37, 39, 41, 42, 43, 45, 47, 52, 53, 56, 59, 61, 63, 67, 71, 72, 73, 75, 79, 80, 83, 86, 87, 89, 90, 93, 96, 97

Question 2

Jasmine has 50 marbles. 20% of the marbles are blue. How many marbles are blue?

Question 3

Dora is selling candied apples for R12 each at entrepreneurship day. Chantel has R 45. How many apples can Chantel buy with R45 and how much change would she have left?

Question 4

Sarah has a 20ml measuring cup. She needs 200ml of milk to add to her cupcake batter. How many times must Sarah use her measuring cup to get to 200ml?

Question 5

Vertical column method to add

56 909 + 99 679 =	666 753 + 65 432 =

Vertical column method to subtract

267 564 - 56 567 =	199 349 - 34 332 =

ACTIVITY 4

Question 1

Addition and subtraction of common fractions (denominator is multiple of another)

$¾ + \frac{2}{4} =$

$\frac{8}{2} + \frac{3}{2} =$

$\frac{7}{8} - \frac{1}{8} =$

$\frac{32}{6} - \frac{16}{6} =$

Question 2

Find percentages of whole numbers

½ as a percentage

=

67 as a percentage

=

Question 3

Calculations with fractions

If 5 children share 1 sweet equally, how much will they then each get?

ACTIVITY 5

Question 1

Reading time and time instruments

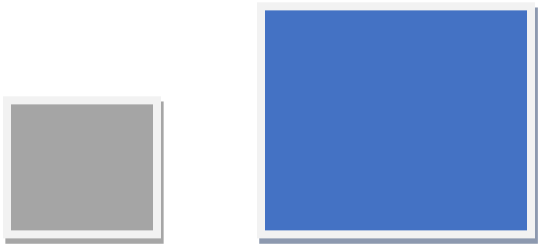
Thando's soccer match starts at 4 o'clock and his school ends at 2:30pm. Thando forgets his soccer shoes at home. How long does Thando's mother have to drop his shoes before the soccer match starts?

Question 2

Properties of 2D shapes

Squares

How many sides does these two squares have in total?



Rectangles

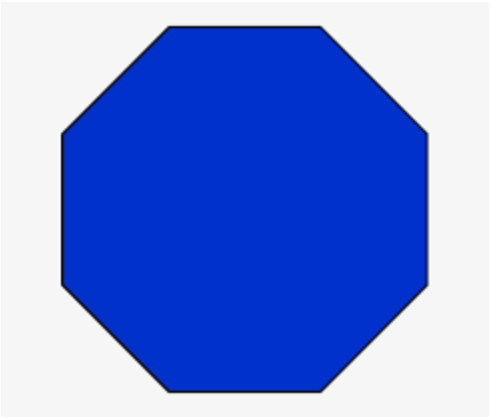
Colour in the sides of the rectangle that is the same length (you can re-draw the shape in your book/page)

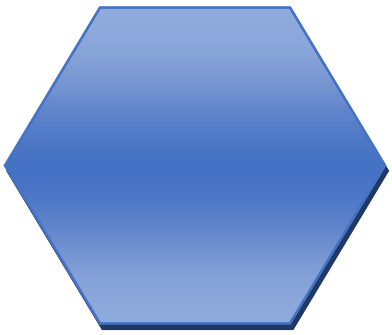
Parallelograms

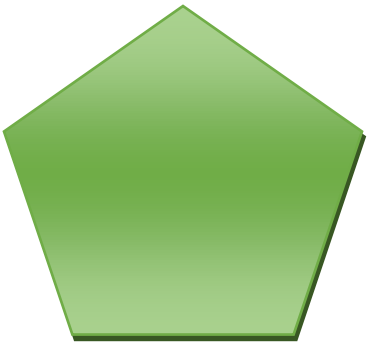
Match the parallelogram to its name:

Pentagons Hexagons

Heptagons Octagons

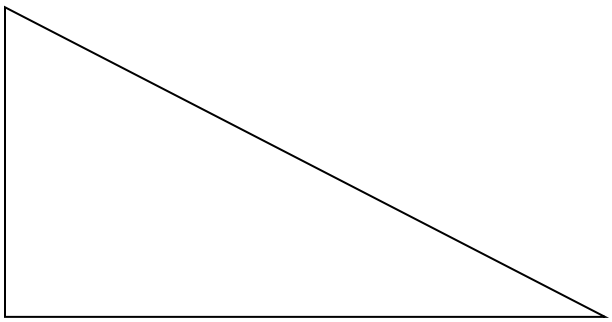






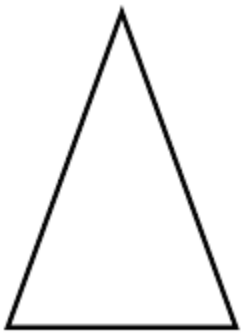
Triangles

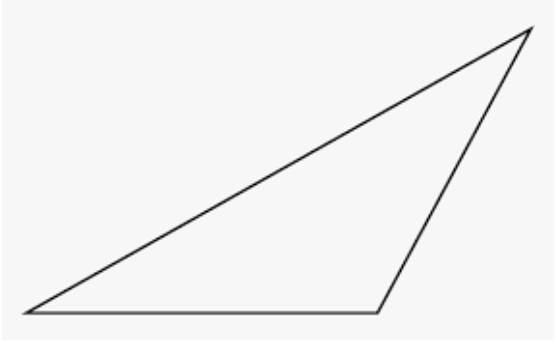
What size is the angle below?

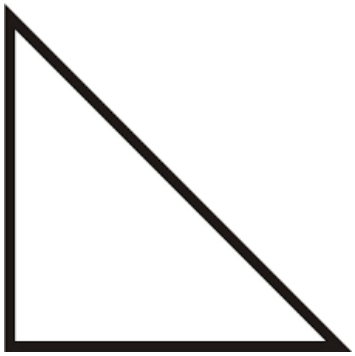


Match the name of the triangle with the correct one:

Acute Right Obtuse







Question 3

Draw double bar graph

Tom and Jim collected sweets in the different time periods. Draw a double bar graph showing their results.

Tom	Jim	Time (minutes)
2	3	2
6	6	4
8	9	6
12	12	8

Question 4

Long division

Divide the following using long division:

6832 ÷ 4 =

Question 5

Building up and breaking down numbers

Build up:

400 + 60 + 7 =

5000 + 600 + 8 =

200 000 + 50 + 2 =

Break down:

7590 =

409 673 =

692 =

Question 6

Rounding off

Round the following off:

1. 2,34 = ____
2. 5,6 = ____
3. 7,7 = ____
4. 1,29 = ____

Question 7

Using addition and subtraction as inverse operations

1. 100 – 1 = ___
2. 67 + ___ = 100
3. 6456 - ___ = 6003

Using multiplication and division as inverse operations

1. 3 x ___ = 6
2. 88 ÷ 8 = ___
3. 9 x ___ = 72
4. 4 x 6 = ___

GRADE 7

ACTIVITY 1

LESSON TOPIC: FRACTIONS

Question 1

Complete by filling in the bigger as (>) or smaller as (<).

1.

a) $\frac{1}{2}$ $\frac{1}{5}$ b) $\frac{1}{6}$ $\frac{1}{4}$ c) $\frac{1}{3}$ $\frac{1}{4}$ d) $\frac{4}{8}$ $\frac{4}{10}$ e) $\frac{2}{6}$ $\frac{2}{7}$ f) $\frac{3}{9}$ $\frac{3}{5}$

2. Choose the correct answer to complete the following statement: The bigger the denominator of fractions with the same numerator, the (bigger/smaller) the value of the fraction will be.

Question 2

Fill in the missing symbols (<; =;>).

a) $\frac{1}{3}$ $\frac{2}{4}$ b) $\frac{4}{6}$ $\frac{2}{3}$ c) $\frac{3}{7}$ $\frac{1}{3}$ d) $\frac{4}{5}$ $\frac{8}{10}$ e) $\frac{1}{2}$ $\frac{3}{6}$ f) $\frac{5}{7}$ $\frac{3}{5}$

Question 3

Arrange the following fractions in ascending order.

a) $\frac{2}{3;}$ $\frac{1}{2;}$ $\frac{5}{6}$ b)2 $\frac{2}{3;}$ $\frac{7}{4;}$ 2 $\frac{5}{6}$ c)2 $\frac{3}{5}$; 2 $\frac{9}{10}$; $\frac{28}{10}$

d)3 $\frac{6}{7}$; $\frac{29}{14;}$ $\frac{15}{7}$ e) $\frac{3}{4}$; $\frac{3}{5;}$ $\frac{3}{2}$

Question 4

Simplify the following fractions.

(Remember, look for the same number that can be divided into the numerator and denominator.)

a) $\frac{15}{20}$ b) $\frac{4}{10}$ c) $\frac{3}{12}$ d) $\frac{8}{6}$ e) $\frac{14}{8}$

f) $\frac{9}{12}$ g) $\frac{16}{20}$ h) $\frac{25}{100}$ I) $\frac{6}{18}$ j) $\frac{26}{50}$

k) $\frac{45}{9}$ l) $\frac{60}{12}$

Question 5

Multiply the following mixed numbers.

(Remember you may not divide with a fraction, apply the reciprocal.)

a) $1\frac{3}{4} \times 1\frac{1}{7}$ b) $1\frac{3}{9} \times \frac{3}{8}$ c) $\frac{2}{7} \div 1\frac{2}{12}$

Question 6

Fill in the empty boxes.

a) $\frac{1}{2} + \frac{1}{4} = \frac{2}{4} + \frac{1}{4} = \frac{\quad}{4}$ b) $\frac{2}{6} + \frac{1}{2} = \frac{\quad}{12} + \frac{6}{12}$

ACTIVITY 2:

Question 1

Write in descending order.

a) 593 486, 593 489, 593 487, 593 485, 593 488

b) 289 542, 289 540, 289 539, 289 541, 289 538

c) 903 675, 903 678, 903 676, 903 679, 903 677

Question 2

What symbol do we use for approximation?

_____

Question 3

Round off to the nearest 10.

a) 7≈____ b) 64≈____

c) 328≈____ d) 451≈ ____

Round off to the nearest 100.

a) 4≈ ____ b) 54≈ ____

c) 938≈ ____ d) 1873≈ ____

Round off to the nearest 1000.

a) 324≈ ____ b) 1924≈ ____

c) 14 342≈ ____ d) 72 589≈ _____

Question 4

Calculating whole numbers. (Show all calculations.)

a) 278 467+ 197 539= b) 87 382+ 12 213=

c) 476 006 – 197 539= d) 68 763 – 29 552=

Question 5

Write down the first six multiples of the following pairs of numbers and circle the common multiples.

a) 2; 6 b) 4; 7 c) 3; 9

Question 6

Identify all the prime numbers from 1-100. (Prime numbers are numbers that can only be divided by one and itself.)

Question 7

Express each of the following odd numbers as the sum of 3 prime numbers.

(Example: 29 = 3+ 7+ 19)

a) 83 b) 53 c) 99

ACTIVITY 3

Question 1

Write the following in expanded notation.

a) 549 327

b) 77 666

c) 154 798 105

Question 2

Decimals: Fill in the missing number.

a) 32,4+ ____ = 32,9

b) 8,452+ ____ = 8,492

Question 3

Write the following in expanded notation:

a) 456, 321= 400+ 50+ 6+ 0,3+_____ + _____

b) 98, 342 = _____ + _____ + _____ + _____ + _____

c) 321, 987= _____ + _____ + _____ + _____ + _____ + _____

Question 4

Answer the following:

a) What $\frac{1}{4}$ of R1.00? _____

b) What is 50% of R1.00? _____

c) What is 0,25 of R1.00? _____

Question 5

Patterns: Complete the following.

a) _____ + 19= 19

b) 1 × _____ = 76 435

c) _____ - 499 999 = 0

Question 6

If a= 3, b= 6 and c= 12, complete and calculate the sums:

a) a + b= _____; b + a = ____

b) (a+ b) × c= _____; a + (b ×c)= _____

c) c × 1= _____; 1 × c= ____

Question 7

Calculate the following using BODMAS:

a) 6 – 3 + 7= _____

b) 35 ÷ 5 + (18 – 16)= _____

c) (40 ÷ 5) × 2= _____

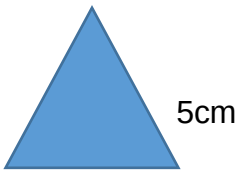
ACTIVITY 4

Question 1

Calculate the area of the triangle:

Formula: Area of triangle= l × b

a)



10cm

b)

18mm

Question 2

Answer the following questions about length.

a) How many mm is there in a cm?

b) How many cm are there in a m?

c) How many m are there in a km?

Question 3

Answer the following questions about capacity?

a) How many ml are there in a litre?

b) How many litres are there in a kl?

Question 4

Use the commutative property of addition or multiplication to make the equations true.

Example: 5 + 13 = 13 + 5 (addition) and 5 × 13 = 13 × 5 (multiplication)

a) 4 + 9= _____ b) 18 × 11= _____

c) _____= 100+ 35 d) _____= 54 × 27

Question 5

Use the associative property of addition or multiplication to make the statements true. Solve the equation.

Example: (5 + 2) + 4 = 5 + (2 + 4) 11 = 11 (addition)

(5 × 2) × 4 = 5 × (2 × 4) 40 = 40 (multiplication)

a) (7 + 3) + 1 = _____ _____ b) 11 × (3 × 2) = _____ _____

Question 6

Write the following ratios as fractions. Use boys: girls for all your ratios.

a) 5:7 _____ b) 1:2 _____ c) 6: 8 _____

ACTIVITY 5

Question 1

Complete the following:

a) 0,31; 0,32; 0,33; ___; ___; 0,36; 0,37; 0,38; 0,39

b) 0,1; 0,2; 0,3; ___; ___; 0,6; 0,7; 0,8; 0,9

c) 0,121; 0,122; 0,123; ___; ___; 0,126; 0,127; 0,128; 0,129

Question 2

Decimal calculations:

Example: 0.2 × 0.3 = 0.06

0.02 × 0.3 = 0.006

0.02 × 0.03 = 0.0006

a) 0,6 × 0,7 = _____ b) 0,04 × 0,02= _____ c) 0,05 × 0,1 = ____

Question 3

Fractions. Calculate the following:

a) Multiples of 3:

Multiples of 4:

LCM:

b) Multiples of 5:

Multiples of 6:

LCM:

c) Multiples of 8:

Multiples of 10:

LCM:

Question 4

1 million goods are sold per annum (each year).

a) What is the total amount of goods sold per year? _____

b) What is $\frac{2}{10}$ of the total amount? _____

c) What is $\frac{6}{10}$ of the total amount? _____

Question 5

Fill in **<**, **=** or **>**:

a) 697 059 ___ 699 059

b) 925 860 ___ 925 680

c) 50 000 + 3 ___ 50 300

d) 5 556 ___ 5655 – 100

Question 6

Round off to the nearest 5:

Example: 4 ≈ 5

a) 7 ≈

b) 472≈

c) 822 ≈

d) 3 464 ≈

GRADE 8

ACTIVITY 1

LESSON TOPIC: FACTORS AND MULTIPLES

Question 1

1.1 Write down the Factors and Multiples of the following. Enter at least 4 multiples.

a) F_{20}
b) F_{28}
c) F_{36}
d) M_{11}
e) M_{36}
f) M_3

Question 2

1.2 Determine prime factors of the following
a) 588
b) 27

Question 3

1.3 Determine the HCF:
a) 14; 21 en 35
b) 38; 57 en 95
c) 360 en 600

Question 4

1.4 Determine the LCM:
a) 6; 12 en 18
b) 2; 6 en 11
c) 80; 120 en 200

ACTIVITY 2

LESSON TOPIC: OPERATIONS WITH INTERGERS

Question 1

Determine the value of the following without using a calculator

a) $\sqrt[3]{(13-9)\times(-10\div-5)}$

b) $3^{3}-(-2)^{2}+(-1)^{7}$

c) $\frac{5-(-3)+2^{2}}{2(-3)}$

ACTIVITY 3

LESSON TOPIC: NUMBER PATTERNS

Question 1

Write down the following 3 terms

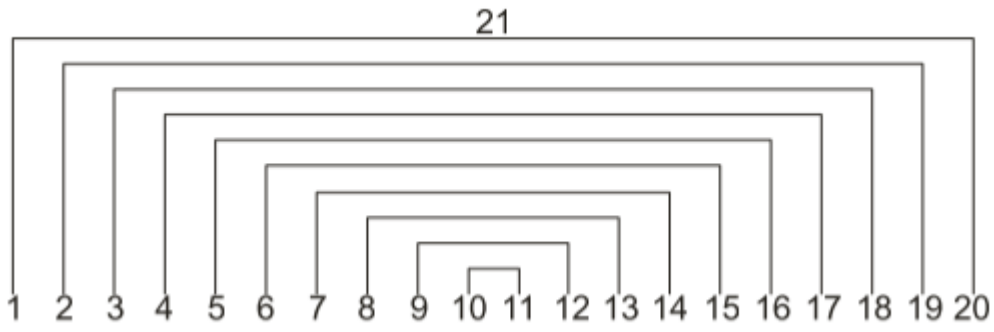
a) -3; -7; -11; …
b) 1;1;2; 3; 5; 8; …
c) 1; 4; 9; 16; 25; …

Question 2

In the diagram below, the sum of two numbers is determined each time For example, 1 + 20 = 21 is as shown in the diagram.

a) Fill in the rest of the missing numbers. So count the second and second last numbers up, third and third last numbers etc.
b) Without using a calculator, calculate the sum of all the natural numbers from 1 to 20. Try to use your answers as obtained in a).

Tip: try to compile a formula, just don't include 1 + 2 + 3 + 4 ... etc. do not.



ACTIVITY 4

LESSON TOPIC: ALGEBRA

Question 1

Simplify without the use of a calculator.

a) $\frac{(m^2n^3)^3}{m^4n^4}$

b) $(3c^5d^3)^4$

c) $(-4x^{-3})^0 \times (-4x^3)^2$

d) $\frac{2^{200}.2^{150}}{2^{300}}$

e) $\sqrt{64m^{64}}$

f) $3x + 5x$

g) $3x^2 + 5x + 2x^2 - 6 - 5x - 7$

h) $\frac{4k^2-8k}{2k} + 5k^2 - 1$

i) $x^{2+5}.x^{3-4}.2y^0$

j) $2\frac{4}{5} \div 4\frac{1}{5}$

k) $\frac{4b}{12a} \times \frac{24a}{8b}$

l) $\frac{5^0 \times m^{12} \times n^4 \times n^{-2}}{m^5 \times m \times n^6}$

m) $(\frac{144r^4s^3t}{-24r^2t^5})^2$

n) $(y-8)^2 - 7(y+1) + (2-7)(2+y)$

Question 2

Are the following statements true or false?

a) $-3^2 = (-3)^2$

b) $2x + 3x = 5x = 3x + 2x$

c) $(p+q)^2 = p^2 + q^2$

ACTIVITY 5

LESSON TOPIC: RATIOS, RATE AND INTEREST

Question 1

Write the following relationships in their simplest form

a) 70c to R1
b) 2 months to 2 years
c) 4cm to 40mm

Question 2

Calculate the following

a) A piece of rope is 60m long and should be divided in a ratio of 1: 3: 2. How long will each piece be?

Question 3

Determine the following

a. Tomatoes cost R1,84 per kg. What will 2.5kg tomatoes cost?
b. Werner will run the Two Oceans at his home, due to the the coronavirus. He jogged on average at 4m per second. He wants to know how far he will run in half an hour?
c. I got 70c change from R7 after buying 7 sweets. If all the sweets cost the same amount, what's the price of one sweet?
d. Franco received 34 out of 40 for Mathematics and 25 out of 30 for Afrikaans. In which subject did he get the highest percentage?
e. 10% of bananas are rotten and 15% are still green. If there are 740 bananas in the container, how many bananas are edible?

Question 4

If CP(cost price) + profit/loss = SP (selling price), calculate the following

a) CP = R110; profit =12%; SP = ?
b) CP = R1000; %loss = ?; SP= R800
c) CP= R300, profit = 30%; SP= ?

Question 5

Louise won the lottery. She decides to spend some of the money on a deposit for a car, pay off student debt and the money left over to invest in an account. The ratio of how she uses the money is 2: 3: 1. Her car deposit is R100 000 and she pays off R150 000 in debt. She plans to invest the remaining money at 10% per annum, simple interest until it will be enough for a deposit on a home

a) Calculate the amount of money Louise won.
b) Calculate the amount of money she invests.
c) What percentage of the money she won does she use to pay off debt?
d) Calculate for how many years she must invest the amount of money calculated in b) if the deposit for the house is 25% of the amount won, calculated in a).

GRADE 9

ACTIVITY 1

LESSON TOPIC: EXPONENTS

Question 1

1 . Simplify the following:

(a) $(-1)^{101}$
(b) $(-0{,}56)^{0}$
(c) $(12ab)^{2}$

Question 2

Which of the following are true? Correct any false statement.

(a) $6^{-1} = -6$ (b) $3x^{-2} = \frac{1}{3x^2}$ (c) $3^{-1}x^{-2} = \frac{1}{3x^2}$

(d) $(ab)^{-2} = \frac{1}{a^2b^2}$ (e) $\left(\frac{2}{3}\right)^{-2} = \left(\frac{3}{2}\right)^{2}$ (f) $\left(\frac{1}{3}\right)^{-1} = 3$

Question 3

Simplify

(a) $(2a)^3 + (-3a)^2 + (4a)^2$
(b) $m^4 - (-3m^2)^2$
(c) $(-2x^2)\ (-2x\ )^{-2}$

Question 4

Find the value of x

(a). $2^x = 32$
(b). $3^x = 81$
(c) $5^x = 625$
(d) $3^{x+2} = 27$
(e) $3^x = 9$

ACTIVITY 2
LESSON TOPIC: PATTERNS

Question 1

In each case, follow the instruction to make a sequence with eight terms.

(a) Start with 1 and multiply by 2 repeatedly.
(b) Start with 256 and subtract 32 repeatedly.
(c) Start with 256 and divide by 2 repeatedly.

Question 2

Describe a rule that you could use to get the pattern in the following sequences

(a) 6, 10, 14, 18, 22, ….

(b) 2, -4, 8, -16, 32, ….

(c) 1, 4, ,9, 16, 25, 36,49

Question 3

Find a rule that describes the following number patterns in your own words. Use this rule to extend each sequence by 3 terms and then determine the 10^{th} term

(a) 8, 5, 2, -1, ….

(b) 18, 16, 2, …

Question 4

Choose any whole number smaller than 10 as the first term of a sequence.

(a) Copy the table. Use your chosen first term to form a sequence by adding 5 repeatedly.

(b) Multiply each term number below by 5 to form a sequence:

Term number	1	2	3	4	5	6	7	8
Term value								

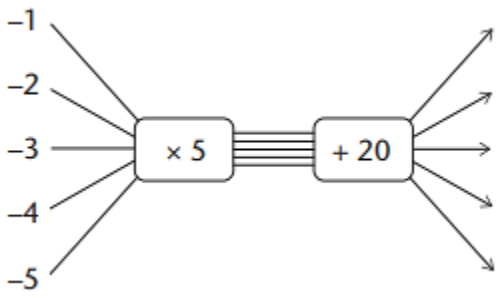
(c) What is similar about the two sequences you have formed?

ACTIVITY 3

LESSON TOPIC: FUNCTIONS AND RELATIONSHIPS

Question 1

Copy and complete the following flow diagram:



Question 2

Copy and complete this table for the function described by 5x + 20:

Input numbers	–1	–2	–3	–4	–5
Function values					

Question 3

Determine the rule that describes the relationship between the numbers in the top to (x) and the bottom row (y) in the following tables:

(a).

x	1	2	3	4	5
y	3	6	9	12	

(b)

x	0	1	2	3	4
y	-2	-5	-8	-11	-14

(c)

x	-4	-3	-2	-1	0
y	6	4	2	0	-2

ACTIVITY 4

LESSON TOPIC: ALGEBRAIC EXPRESSIONS

Question 1

Copy and complete the by doing the necessary calculations. Calculate the numerical value of the expressions for the various values of x.

	x	−2	−1	0	1	2
(a)	$3x+2$					
(b)	$2x-3$					
(c)	$3x+2+2x-3$					
(d)	$2x-3+3x+2$					
(e)	$5x-1$					
(f)	$(3x+2)(2x-3)$					
(g)	$3x(2x-3)+2(2x-3)$					
(h)	$6x^2-5x-6$					
(i)	$\frac{(3x+2)(2x-3)}{3x+2}$					
(j)	$\frac{6x^2-5x-6}{3x+2}$					

Question 2

Copy and complete the following tables

x	2	3	5	10	−5	−10
$12x-7+3x+10-5x$						

x	2	3	5	10	−5	−10
$10x+3$						

Question 3

Expand and simplify

(a). (3x + 2) (2x -5)

(b) $(2x - 3)^2$

(c) (7x-1)(7x+1)

Question 4

Expand and simplify

a) $(x + 1)^2 + (2x + 3)^2$
b) $(x - 3)^2 - 9$

Question 5

Copy and complete the following table:

x	10	2	5	1
$5x^2 + 2x^2$				
$7x^2$				
$13x - 8x$				
$5x$				

ACTIVITY 5

LESSON TOPIC: EQUATIONS

Question 1

Use any appropriate method to solve the following equations:

(a) $5x + 3 = 24 - 2x$

(b) $2x + 4 = -9$

(c) $3 - x = x - 3$

(d) $6(2x + 1) = 0$

Question 2

Ahmed multiplied a number by 5, added 3 to the answer, and then subtracted the number he started with. The answer was 11. What number did he start with?

Question 3

Use any appropriate method to solve the equations:

(a) $3(x - 2) = 4(x + 1)$

(b) $5(x + 2) = -3(2 - x)$

(c) $1{,}5x = 0{,}7x - 24$

(d) $5(x + 3) = 5x + 12$

(e) $2{,}5x = 0{,}5(x + 10)$

(f) $7(x - 2) = 7(2 - x)$

(g) $1\ 2\ (2x - 3) = 5$

(h) $2x - 3(3 + x) = 5x + 9$

Question 4

The sum of two numbers is 12. The product of the smaller number and 3 is -6. Find the number.

Question 5

The length of a rectangle is 4cm more than its width. If its perimeter is 20cm, find the width.

Students Involved

Beyond Education Program (Setting up activities)

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