MINISTRY OF EDUCATION, YOUTH & INFORMATION

Primary Exit Profile

May/June 2018

PRACTICE QUESTIONS

Grade 6

Mathematics

This paper consists of TEN (10) items.

Mathematics CBT Practice Items

Question 1

Strand: Number

Objective: Grade 6 Term 2 Unit 1
Write a percentage as a fraction with a denominator of 100, or, in its simplest form and/or as a decimal

Item Type: Selected Response - Table Grid

Complete the table given so that the values in each row are equivalent. Write all fractions in their lowest terms

Percent	Fraction	Decimal
1. 320%		
2.	$\dfrac{5}{8}$	
3.		.075
4. 0.6%		
5.	$\dfrac{7}{10}$	

(5 marks)

Question 2

Strand: Number

Objective: Grade 6 Term 2 Unit 1
Write a ratio to compare the numbers of items in two sets or two parts of a single set.

Item Type: Selected Response - Single selected response

At lunch time, the students of Grade 6 Brown spent their time as follows:

- 24 played football
- 10 played hop scotch
- 14 talked with friends

Which of the following shows a ratio of 5 to 7?

A.   talked with friends : played hop scotch

B.   played hop scotch: talked with friends

C.   played hop scotch : played football

D.   talked with friends : played football

(1 mark)

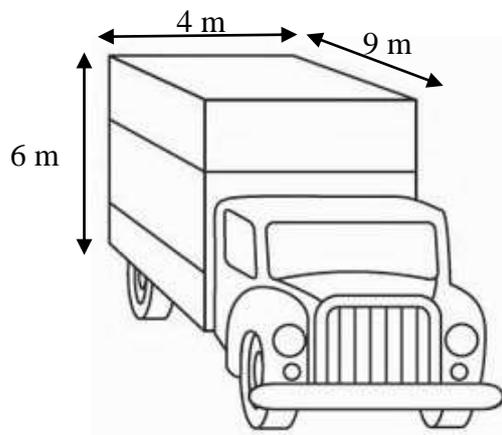## Question 3

Strand: Measurement

Objective: Grade 6 Term 2 Unit 2
                 Investigate and use the formula for the volume of a rectangular prism to solve
                 problems

Item Type: Selected Response - Order Match

The diagram below shows the back of a truck which is the shape of a rectangular prism. Boxes shaped like cubes will be loaded into the back of a truck. The dimensions of the back of the truck (not drawn to scale) are shown below.

Use two numbers from the list to complete the sentence below so that the statement is true.

| 1 metre | 2 metres | 3 metres | 9 | 24 | 216 |

If the edge of each box is _____, then the back of the truck can hold _____ boxes.
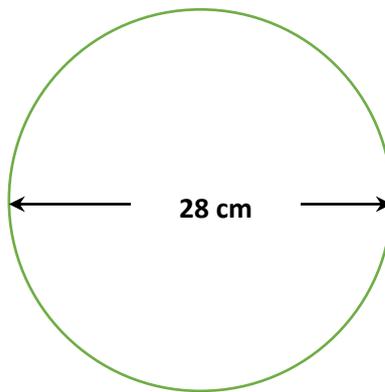
(**1 mark**)

Question 4

Strand: Measurement

Objective: Grade 6 Term 3 Unit 2
Solve problems involving the estimation and calculation of the circumference of a circle.

Item Type: Constructed Response - Extended constructed response

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The diagram below represents the outline of a tyre on a toy car.

What distance will the car travel if the tyre makes one rotation?

28 cm

When making your calculations use $\pi = \dfrac{22}{7}$

Explain how you got your answer.

_____

_____

_____

_____

(4 marks)

Question 5

Strand: Geometry

Objective: Grade 6 Term 1 Unit 3
- Recognize faces, edges, vertices of a solid and classify solids according to the number and shape of their faces.
- Classify solid shapes (prisms, pyramids and polyhedron) according to their properties.

Item Type: Selected Response - Single selected response (with Explanation)

Given the following **square based pyramid**, respond to each statement below with either 'true' or 'false'. If the statement is false, write the correct statement in the space provided.
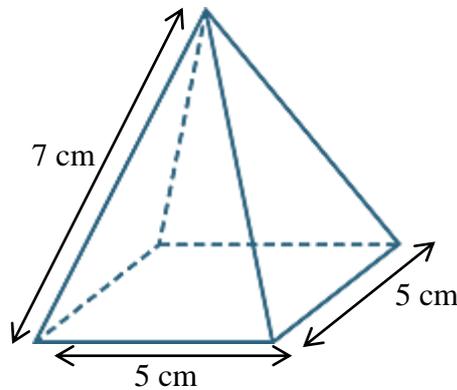
A.   The solid has 4 vertices.

T / F _____

B.   The solid has 8 edges.

T / F _____

C.   The solid has no equilateral triangles as faces

T / F _____

D.   The solid has no isosceles triangles as faces

T / F _____

E.   Opposite sides of the base in the solid are not equal in length

T / F _____

(5 marks)
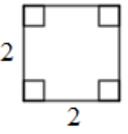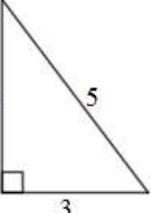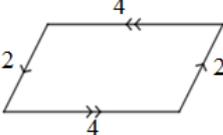
Question 6

Strand:　　　　Geometry

Objective:　　Grade 6 Term 2 Unit 3
　　　　　　　Identify and count the number of lines of symmetry in compound plane figures.

Item Type:　　Selected Response - Table Grid

Each shape below has side lengths labelled in units. Determine the number of lines of symmetry for each shape, and then place a tick (✔) in the correct box.

| Shape	Number of lines of symmetry					
	None	Only 1	Exactly 2	Exactly 3	Exactly 4	More than 4
(square, sides 2 and 2)						
(right triangle, sides 4, 5, 3)						
(parallelogram, sides 4, 2, 4, 2)						

(3 marks)

Question 7

Strand: Statistics

Objective: Grade 6 Term 1 Unit 4
  - Represent data using the stem and leaf plot.
  - Solve problems in which data is given by means of a graph or diagram.

Item Type: Constructed Response - Short constructed response

The stem-and-leaf plot below shows the number of marbles each student in a class collected.

Number of marbles collected

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0 | 2 8 9
1 | 0 2 2 4 9
2 | 3 8 8 8
3 | 1 4 6
```
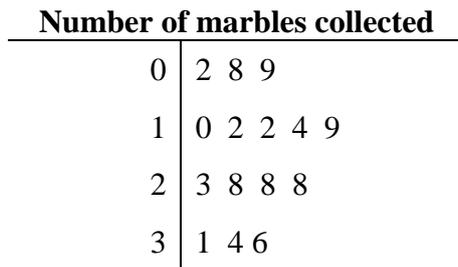
Key: 3 | 1   represents 31

Use the information above to answer these questions:

a. How many students were in the class? _____

b. What is the mode number of marbles? _____

c. What is the average number of marbles that each student had? Show your working

(5 marks)

Question 8

Strand: Statistics

Objective: Grade 6 Term 1 Unit 4
- Discuss the appropriate uses of various tables and graphs.
- Identify patterns and trends in data and make inferences from these patterns and trends.

Item Type: Constructed Response - Short constructed response

Grade 6 students were collecting data for a class project. They wanted to find out which ice cream flavour was most popular. A total of 100 students were surveyed. The data collected from each student is shown in the table below.

Flavours	Vanilla	Chocolate	Strawberry	Grapenut	Rum and Raisin
Number of students	45	30	10	5	10

a)   Which graph would be most appropriate to represent this data?

_____ **(1 mark)**

b)   Represent the data using the graph named in part (a). **A well labelled sketch is acceptable.**

(5 marks)

c)   If the graph in part (b) alone was given, what are **two** conclusions that could be made from it?

Conclusion 1:

_____
_____

Conclusion 2:

_____

_____

(2 marks)

Question 9

Strand: Algebra

Objective: Grade 6 Term 1 Unit 4
- Discuss the appropriate uses of various tables and graphs.
- Identify patterns and trends in data and make inferences from these patterns and trends.

Item Type: Selected Response - Multiple selected response

There were 30 pencils in a box. Some pencils were removed and now there are 12 pencils remaining. Using p to represent the number of pencils that were removed, which two of the algebraic expressions below can be used to determine the number of pencils removed?

A. $p - 30 = 12$

B. $30 - p = 12$

C. $30 + p = 12$

D. $30 \div p = 12$

E. $12 + p = 30$
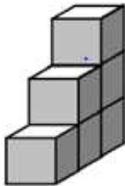
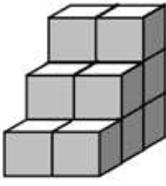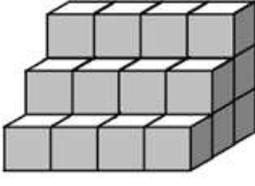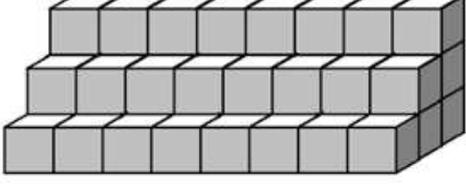F. $12 \times p = 30$

(2 marks)

Question 10

Strand: Algebra

Objective:
- Grade 6 Term 2 Unit 4
  Investigate tables of values to develop algebraic expressions to represent any term in a simple numeric pattern and use these expressions to make predictions.

- Grade 6 Term 3 Unit 1
  Generate number patterns and identify their rules using algebra

Item Type: Selected Response - Single selected response with explanation

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The table below shows a pattern created with blocks.

i.   Complete the table by writing the number of blocks for each term

Term	1^{st}	2^{nd}	3^{rd}	4^{th}
Shape				
Number of Blocks				

ii.   How many blocks will be in the 5^{th} term? _____

State, in words the rule for the pattern

_____

_____

_____

_____

_____

(**5 marks**)