



**MINISTRY OF  
EDUCATION,  
YOUTH &  
INFORMATION**



**Curriculum  
Based Test**

*Grade 6 Mathematics  
Sample Items*

Prepared by the Student Assessment Unit  
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# Introduction

This booklet consists of items originally found on the 2019 administration of the Primary Exit Profile (PEP) Mathematics Curriculum Based Test (CBT). Fifteen (15) items are contained within this booklet and together they provide a guide that should support the preparation of students for the 2022 administration of the Mathematics CBT.

# Characteristics of Items

**Item Number:** 1

**Item Type:** Single Select Multiple Choice

**Term:** One

**Unit:** One

**Depth of Knowledge:** One

**Objective:** Name and list members in the intersection or union of two sets.

**Item Description:** Students are required to list the members in the intersection of the two sets given.

The Venn diagram below shows the snack that some children prefer.

U

**Cheetos** **Big Foot**

Kay  
Michael  
David  
Anthony  
John

Mark  
Justin  
Jane

Orville  
Natasha

Zack  
Daniel  
Nate  
Amanda

Which students like **both Cheetos and Big Foot**?

A. {Mark, Justin, Jane}  
B. {Amanda, Nate, Zack, Daniel}  
C. {Kay, Michael, David, Anthony, John, Orville, Natasha}  
D. {Kay, Michael, David, Anthony, John, Mark, Justin, Jane, Orville, Natasha}

**Item Key:** A

**Item Number:** 2

**Item Type:** Single Select Multiple Choice

**Term:** One

**Unit:** One

**Depth of Knowledge:** One

**Objective:** Read, write and use numbers, using the principle of place value, in the Hindu-Arabic system of numeration.

**Item Description:** Students are required to identify the standard form of the number given.

The expanded form of a number is shown below.

$$(2 \times 1000) + (9 \times 100) + (5 \times 10) + (6 \times 1)$$

Which represents the number in standard form?

- A. 2 000 900 506
- B. 290 056
- C. 29 056
- D. 2 956

**Item Key:** D

**Item Number:** 3

**Item Type:** Single Select Multiple Choice

**Term:** Two

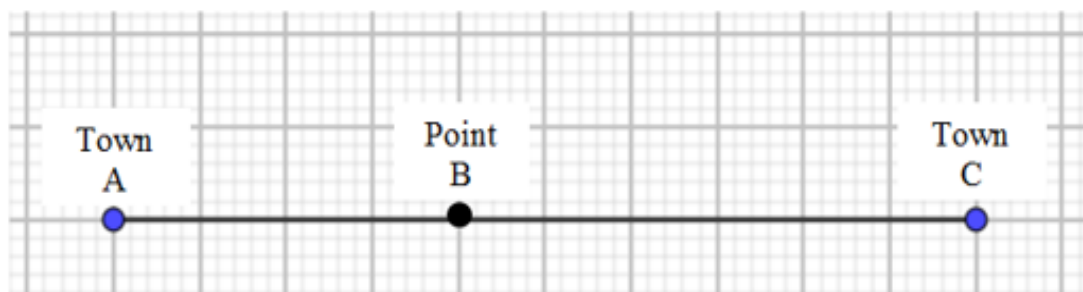
**Unit:** One

**Depth of Knowledge:** One

**Objective:** Calculate a given percentage of a number, amount of money, measure of mass, capacity, etc.

**Item Description:** Students are required to determine the percentage of the distance given.

The diagram below represents the distances between Town A, Point B and Town C. Peter travelled in a straight line from Town A to Town C.



If he stopped at point B, what percentage of the journey did he cover?

- A. 4%
- B. 20%
- C. 40%
- D. 60%

**Item Key:** C

**Item Number:** 4

**Item Type:** Single Select Multiple Choice

**Term:** Two

**Unit:** One

**Depth of Knowledge:** Two

**Objective:** Calculate the entire amount when a percentage of the amount is known

**Item Description:** Students are required to determine the number, based on the percentage of the number given.

20% of a number is 35. What is the number?

- A. 7
- B. 55
- C. 175
- D. 1400

**Item Key:** C

**Item Number:** 5

**Item Type:** Single Select Multiple Choice

**Term:** Two

**Unit:** One

**Depth of Knowledge:** Two

**Objective:** Use ratio to compare quantities.

**Item Description:** Students are required to use the ratio and the total amount given to determine the total share of one part of the ratio.

Fifty (50) sweets were shared between John and Mark in the ratio of 1:4 respectively.  
What was Mark's share?

- A. 40 sweets
- B. 30 sweets
- C. 10 sweets
- D. 5 sweets

**Item Key:** A



**Item Number:** 6

**Item Type:** Single Select Multiple Choice

**Term:** Two

**Unit:** One

**Depth of Knowledge:** Two

**Objective:** Solve problems which require the use of equivalent ratios

**Item Description:** Students are required to use their knowledge of equivalent ratio to determine the ratio of two shares, out of the three-part ratio.

Mark, Stacey and Jennifer all received their weekly salaries. Stacey received \$3 000.00 while Jennifer received \$9 000.00.

If the ratio of Stacey's salary to Mark's salary is 3:4, what is the ratio of Mark's salary to Jennifer's salary?

- A. 1:3
- B. 4:9
- C. 4:3
- D. 9:4

**Item Key:** B

**Item Number:** 7

**Item Type:** Single Select Multiple Choice

**Term:** Two


**Unit:** One

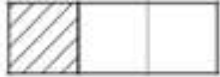
**Depth of Knowledge:** Two


**Objective:** Write equivalent ratios for a given ratio


**Item Description:** Students are required to identify the equivalent ratio for the ratio given.

Which diagram shows the ratio of shaded to un-shaded parts as 2:1?

**A.** 

**B.** 

**C.** 

**D.** 

**Item Key:** A

**Item Number:** 8

**Item Type:** Single Select Multiple Choice

**Term:** Two

**Unit:** One

**Depth of Knowledge:** Two

**Objective:** Solve problems requiring the conversation of fractions to percentage and vice versa

**Item Description:** Students are required to identify the error made from steps followed to convert the percentage given to a fraction.

A child was asked to convert 16% to a fraction.  
There **may** be an error in the given solution.

$$= \frac{16}{10} \quad \text{Line 1}$$

$$= \frac{8}{5} \quad \text{Line 2}$$

$$= 1\frac{3}{5} \quad \text{Line 3}$$

In which line could the possible error occur?

- A. Line 1
- B. Line 2
- C. Line 3
- D. There is no error.

**Item Key:** A

**Item Number:** 9

**Item Type:** Single Select Multiple Choice

**Term:** Two

**Unit:** One

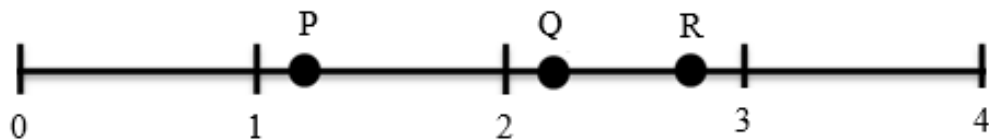
**Depth of Knowledge:** Two

**Objective:** Solve problems requiring the conversation of fractions to percentage and vice versa

**Item Description:** Students are required to use their knowledge of fraction and percentage to justify the estimation given.

The line segment below represents 4 wholes.

Mario correctly selected point Q to represent an estimation of 220% on the line segment.



Which of the following **could not** be his reason for choosing this point?

- A. 220% is just a little over 2 wholes.
- B. Any random point between 2 and 3 would be correct.
- C. Point P is too close to 1 and Point R is too close to 3.
- D. Point Q is approximately  $\frac{1}{5}$  the way between 2 and 3, which is 20% more.

**Item Key:** B

**Item Number:** 10

**Item Type:** Single Select Multiple Choice

**Term:** Two

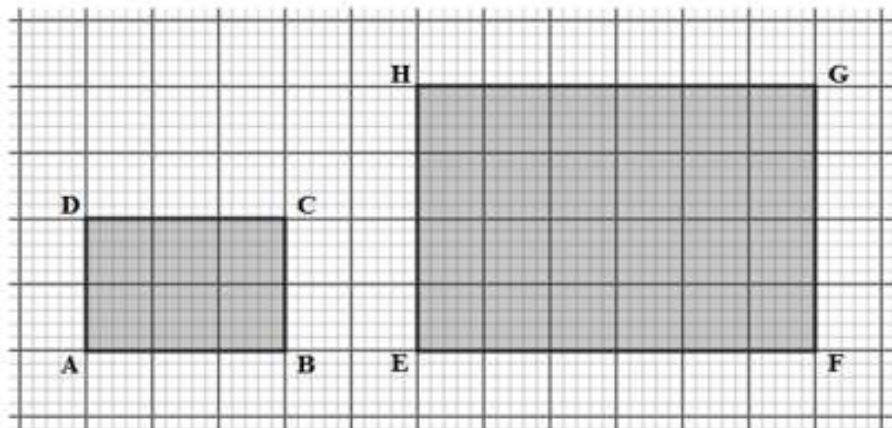
**Unit:** One

**Depth of Knowledge:** Two

**Objective:** Use ratio to compare quantities.

**Item Description:** Students are required to use their knowledge of ratio to compare the length of one side of each rectangle given.

The diagram below shows two similar rectangles.



What is the ratio of side AB to side EF?

- A. 2:1
- B. 2:3
- C. 1:2
- D. 3:2

**Item Key:** C

**Item Number:** 11

**Item Type:** Single Select Multiple Choice

**Term:** One

**Unit:** Two

**Depth of Knowledge:** One

**Objective:** Calculate the perimeter of irregular polygons and regular polygons

**Item Description:** Students are required to identify the statement that best describes how to find the perimeter of a rectangle.

Which information is enough to determine the perimeter of a rectangle?

- A. The length of the diagonal
- B. The area of the rectangle
- C. The size of the angles
- D. The length of the sides

**Item Key:** D

**Item Number:** 12

**Item Type:** Multiple Select Multiple Choice

**Term:** Two

**Unit:** One

**Depth of Knowledge:** Two

**Objective:** Write equivalent ratios for a given ratio

**Item Description:** Students are required to identify two equivalent ratios for the ratio given.

There are 36 students in Bella's class. 16 of them are boys and 20 of them are girls.

Bella thinks that the ratio of boys to girls could be written as 36:16. Bella's teacher says she's incorrect.

What **two (2)** ratios could be used to correctly represent this relationship?

- A. 4 : 5
- B. 9 : 4
- C. 8 : 10
- D. 27 : 12

**Item Key:** A and C

Item Number: 13

Item Type: Multiple Select Multiple Choice


Term: Two

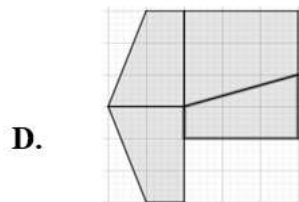
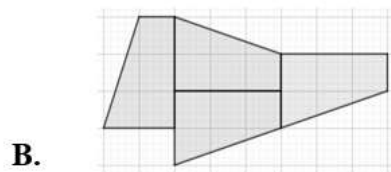
Unit: One

Depth of Knowledge: Two

**Objectives:** Tell what percentage of a set or object is shown.  
Represent and solve problems using geometrical models.

**Item Description:** Students are required to use their knowledge of shapes to determine what the completed shape would look like, based on the percentage of the shape given.

If  represents 25% of a shape, which **two (2)** figures below could be the complete shape?



Item Key: A and B



**Item Number:** 14

**Item Type:** Table Grid

**Term:** One

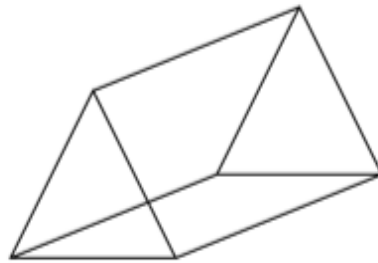
**Unit:** Three

**Depth of Knowledge:** Two

**Objective:** Represent and solve problems using geometrical models

**Item Description:** Students are required to use their knowledge of solids to determine the information necessary to design the triangular prism given.

Tony is using a triangular prism to make the top of a toy house.



He wants to know how much cardboard he needs to build the roof. Indicate whether the information in the first column is **necessary** or **not necessary** in order to make this decision.

Information	Necessary	Not Necessary
The number of edges	(A)	(B)
The area of each triangle	(A)	(B)
The length of each rectangle	(A)	(B)
The number of faces	(A)	(B)

**Item Key:**

B
A
A
A

**Item Number:** 15

**Item Type:** Table Grid

**Term:** One

**Unit:** One

**Depth of Knowledge:** Two

**Objective:** Identify members of finite and infinite sets

**Item Description:** Students are required to identify each set as being finite or infinite.

Shade the appropriate circle to tell whether each set described is **finite** or **infinite**.

Description	Finite	Infinite
The set of marbles in a water tank	(A)	(B)
The set of counting numbers	(A)	(B)
The set of hair on the human body	(A)	(B)

**Item Key:**

A
B
A