



**UNIVERSITY OF JOHANNESBURG**  
**FACULTY OF EDUCATION**  
**SUPPLEMENTARY EXAMINATION 2019**

**PROGRAMME:** B Ed FOUNDATION PHASE  
**MODULE:** MATHEMATICS FOR FOUNDATION PHASE 3A  
**CODE:** MFP10A3  
**TIME:** 2 hours  
**MARKS:** 100  
**EXAMINER:** Mr J Maseko  
**MODERATOR:** Ms N. Swanepoel (UP)

(This paper consists of 5 pages)

**INSTRUCTIONS:**

Read each question carefully before answering it.

Answer all the questions.

Questions can be answered in any sequence but ensure that you clearly number your answers.

Graph paper will be supplied for 4.1.2 on page 5

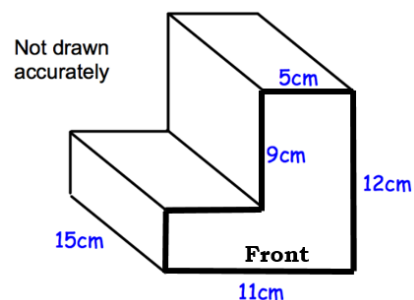
Calculators are not allowed.

**QUESTION 1 – Theory****[13]**

- 1.1 Describe three different methods of collecting data. (3)
- 1.2 What are the three basic steps involved in the concept of measurement? (3)
- 1.3 Discuss the conditions for which alternate interior angles can be said to be equal in size. (2)
- 1.4 Name five attributes of measurement (5)

**QUESTION 2 – Measurement****[37]**

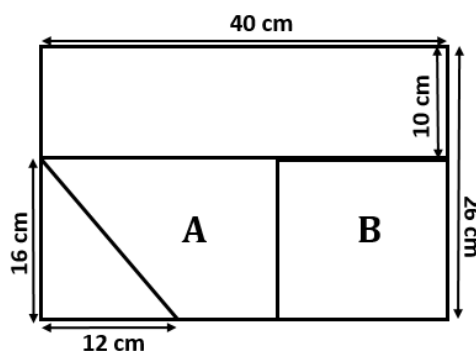
- 2.1 The figure (prism) has the dimensions shown in the diagram.



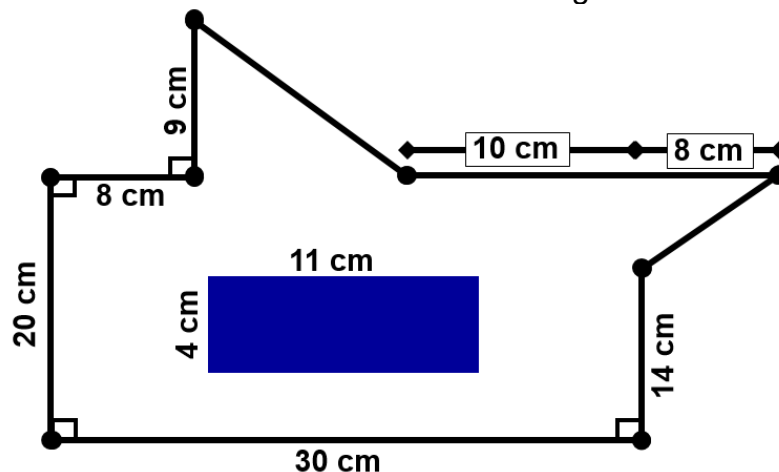
- 2.1.1 Calculate the area of the **front face** of the prism (**bold lines**) (6)
- 2.1.2 Calculate the volume of this structure (4)
- 2.1.3 Calculate the total surface area of the figure – all around (8)
- 2.1.4 Express the surface area of the figure in  $\text{m}^2$  (2)

- 2.2 There are five shapes in the figure including the complete shape. The shapes are:

- a small rectangle,
- a triangle,
- a trapezium (**A**),
- a square (**B**), and
- a big rectangle.

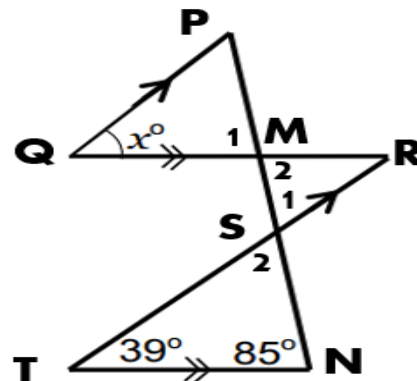


- 2.2.1 Calculate the perimeter of the **big rectangle** (3)
- 2.2.2 Calculate the perimeter of shape **A** (4)
- 2.2.3 Calculate the area of shape **B** (3)
- 2.3 Calculate the size of the **unshaded area** of this figure below (7)



**QUESTION 3 – Angles****[21]**

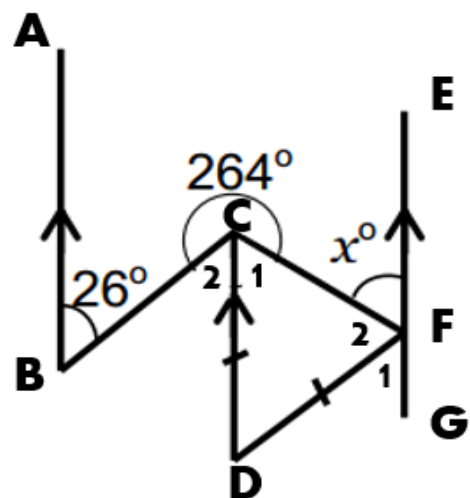
Use this diagram to answer all the questions and to provide reasons for each case. **PQ//TR** and **QR//TN**



- 3.1 What is the size of angle  $S_2$ ? (2)
- 3.2 What is the size of angle  $M_1$ ? (3)
- 3.3 What is the size of angle  $R$ ? (2)
- 3.4 What is the size of angle  $Q$  (i.e.  $x$ )? (2)

Use this diagram to answer all the questions and to provide reasons for each case.

**AB//CD//EG**



- 3.5 What is the size of angle  $C_2$ ? (3)
- 3.6 What is the size of angle  $F_2$ ? (3)
- 3.7 What is the size of angle  $x$ ? (2)
- 3.8 You have a regular polygon with **32** sides. By showing all the calculations:
  - 3.8.1 determine the sum of interior angles (2)
  - 3.8.2 determine the size of each interior angle (2)

**Question 4 - Data Handling****[29]**

**4.1** Ten Lottery game draws with very similar results were put together in the information below. Group the data into a tally chart and the frequency table.



Draws	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
<b>B1</b>	26	23	26	23	25	26	23	23	26	34
<b>B2</b>	41	25	41	25	34	41	25	25	41	35
<b>B3</b>	43	26	42	34	35	42	42	35	42	41
<b>B4</b>	44	41	43	35	43	43	43	44	43	42
<b>B5</b>	45	44	45	42	45	44	45	45	44	43
<b>PB</b>	42	45	34	41	45	44	35	41	45	45

4.1.1 Draw a frequency table to represent each number as categories (4)

Category	Frequency
<b>23 - 26</b>	
<b>34 - 36</b>	
<b>41 - 43</b>	
<b>44 - 46</b>	

4.1.2 Draw a **pie** chart to show the results summarised in 4.1.1 (4)

Show all the calculations before drawing the pie chart (4)

**4.2** Using **ONLY** B1 and B2 rows (20 numbers) do the following

4.2.1 Sort these 20 numbers in an ascending order in one row (4)

4.2.2 Find the **mean** (3)

4.2.3 Find the **modal** number (2)

4.2.4 Find the **median** of the numbers (2)

**4.3** “Offloading method” application

4.3.1 Calculate the <b>average</b> of the five given numbers	<b>132</b>	<b>125</b>	<b>48</b>	<b>325</b>	<b>445</b>	(2)
4.3.2 Use the “offloading method” to show how to get the average following numbers						(4)
	<b>155</b>	<b>325</b>	<b>81</b>	<b>67</b>	<b>447</b>	
<b>Offloads</b>						
New numbers						
<b>Offloads</b>						
New numbers						
<b>Offloads</b>						
New numbers						

**TOTAL: 100**

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