WCED EXTERNAL EXAMINATION

Name: _____ **Grade: 7** ____

Mathematics Paper 2 **Time: 2 hours**

20 November 2019 **Total:** _____**/80**

Examiner: P. Swanepoel, et al **Moderator: R. Alves**

Instructions:

1. Strictly NO calculators may be used.
2. Read through your questions carefully.
3. Write clearly and neatly with a sharp pencil.
4. Once done, go through your paper to check all your answers again.

Section A: 2D shapes, Triangles and Angles [39]

1) Study the shapes below and answer the questions that follow:

i)  ii) 

1.1) Identify the two quadrilaterals.

i) _____ ii) _____ (1)

1.2) Give one similarity between the two quadrilaterals.

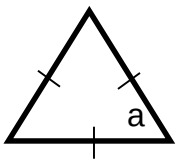
_____ (1)

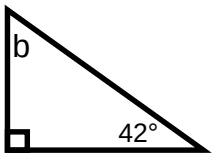
1.3) Give one difference between the two quadrilaterals.

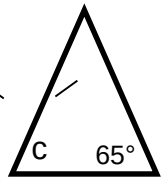
_____

_____ (1)

2) Study the triangles and answer the questions that follow:

i 

ii 

iii 

2.1) Identify the following triangles and give a reason for your answer:

i: _____ Reason: _____

ii: _____ Reason: _____

iii: _____ Reason: _____

(3 × 2 = 6)

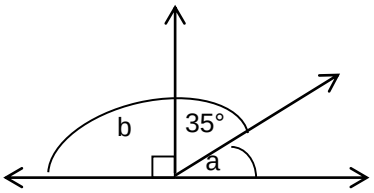
2.2) Calculate the size of angle a-d:

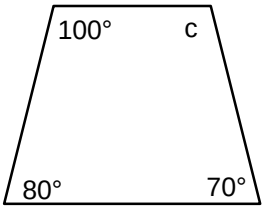
A= _____ C= _____

B= _____ D= _____

(4 × 1 = 4)

2.3) Calculate the missing angles in the following diagrams:



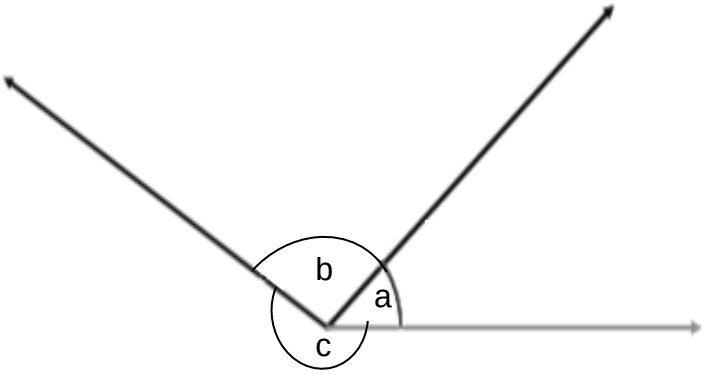


a)_____

b) _____

c) _____ (3)

2.4) Measure the following angles using a protractor and identify what KIND of angle each are:



a) Size: _____

Kind of angle: _____

b) Size: _____

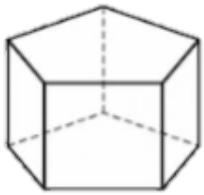
Kind of angle: _____

c) Size: _____

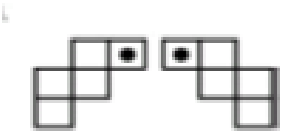
Kind of angle: _____

(3 × 2 = 6)

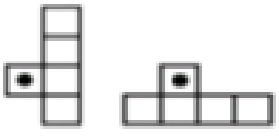
3.1) Complete the table below: (8 x 1 = 8)

3-D Object	Name	Number of edges	Number of faces	Number of vertices
	_____ _____	_____	_____	_____
	_____ _____	_____	_____	_____

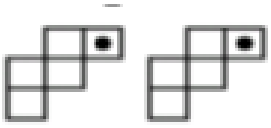
3.2) Which transformation took place in each of the following diagrams?



a)

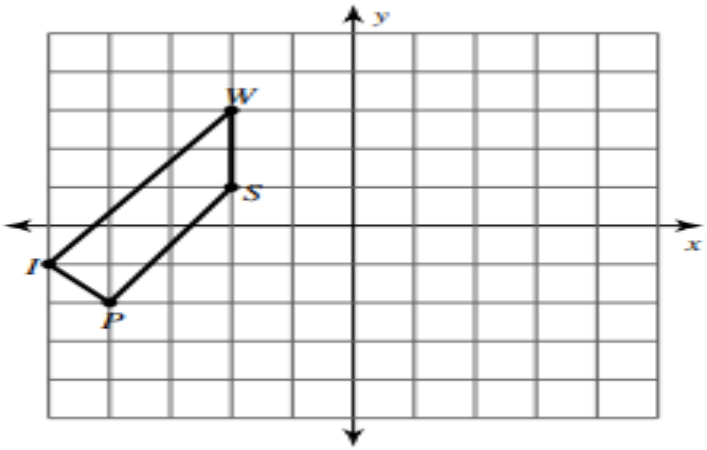


b)



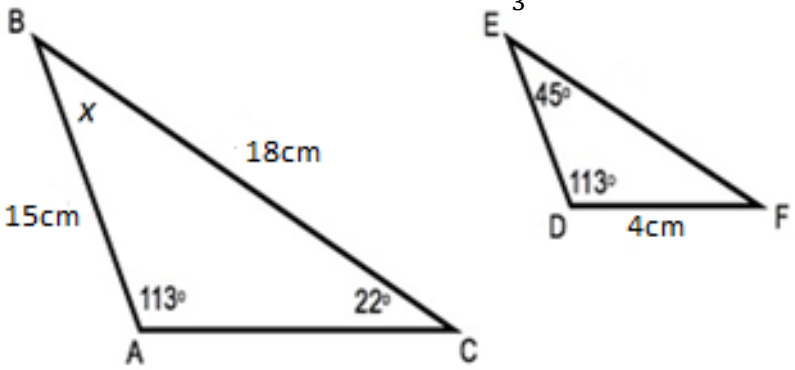
c) (3)

3.3) Draw the reflection of shape WSPI on the diagram below.



(1)

4) These triangles are similar. Triangle DEF is a $\frac{1}{3}$ of triangle ABC.



4.1) Give the length of EF: _____ (1)

4.2) Give the length of side AC: _____ (1)

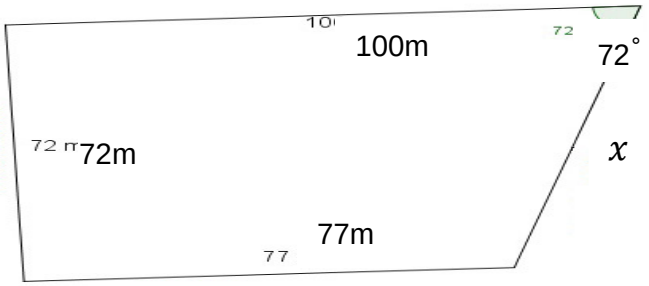
4.3) Give the size of angle B: _____ (1)

4.4) Name the triangle according to the lengths of its sides: _____ (1)

4.5) Name the triangle according to the size of its angles. _____ (1)

Section B : Perimeter, Area, Surface Area and Volume/capacity [25]

1) The shape below shows the border of a farmer's property. Answer the questions that follow: (Show all calculations.)



1.1) If the perimeter of this property is 325 m, Find the length of the side ***"x"***

_____

_____ (2)

1.2) The owner of this property wants to put a fence around it. What would the owner pay if the cost of the fencing is R345/m?

_____

_____

_____

_____

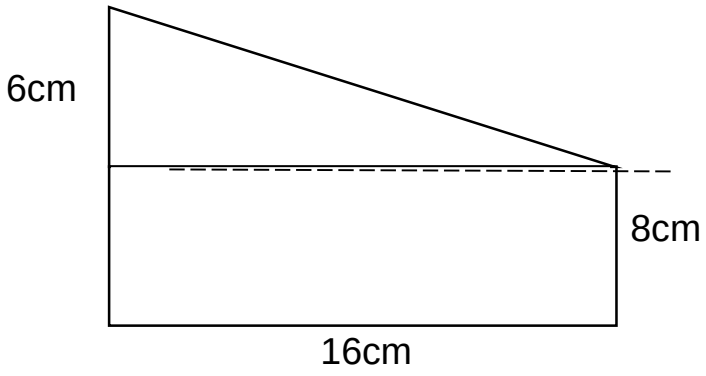
_____

_____

_____

_____ (3)

2) Calculate the **total area** of the following shape. **(Show the formula for each calculation):**



_____

_____

_____

_____

_____

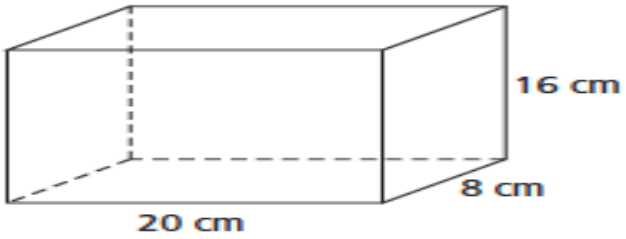
_____

_____

_____

_____ (5)

3) Calculate the **total surface area** of the following object: (Show all calculations.)



_____

_____

_____

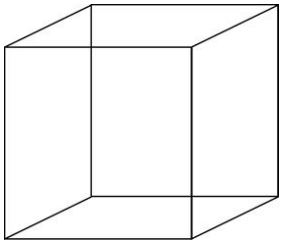
_____

_____

_____

_____ (4)

4) Study the cube given below and answer the questions that follow:



Side measurements = 40mm

4.1) Calculate the **volume** of this cube :

_____

_____

_____ (3)

4.2) How many **litres** of water can this object hold? _____ litres. (1)

4.3) In your own words, explain the **difference between volume and capacity**.

Volume is _____

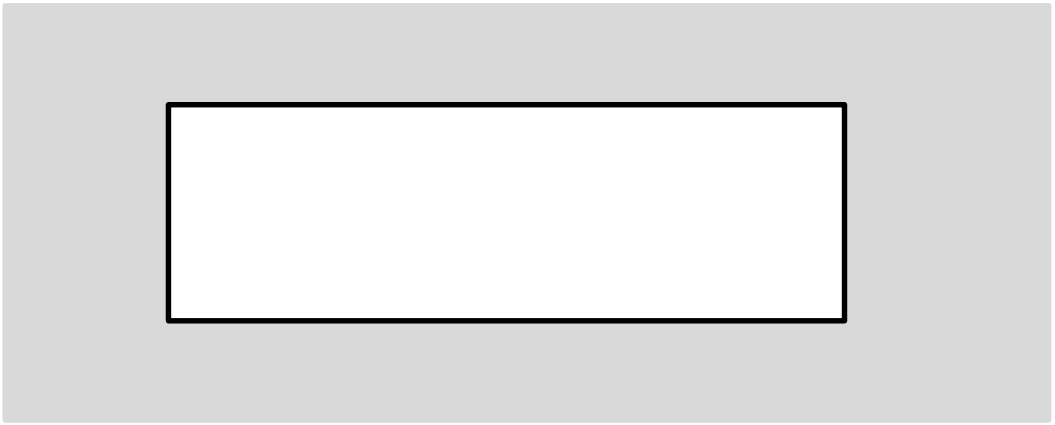
_____

Capacity is _____

_____ (2)

5) Below is a diagram of Peter's garden with a swimming pool in the middle that measures 8m × 5m.
The shaded part is where he wants to plant grass around the pool.

18m



10m

5.1) Calculate the area of the shaded part.

_____

_____

_____

_____ (3)

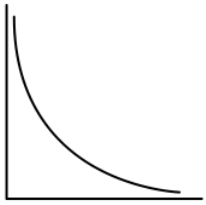
5.2) If grass costs R30/m², how much will Peter have to pay for it?

_____

_____ (2)

Section C - Data Handling [16]

1.1) Underline the correct terms to describe the graph below. (2 × 1 = 2)



A) Linear / non-linear

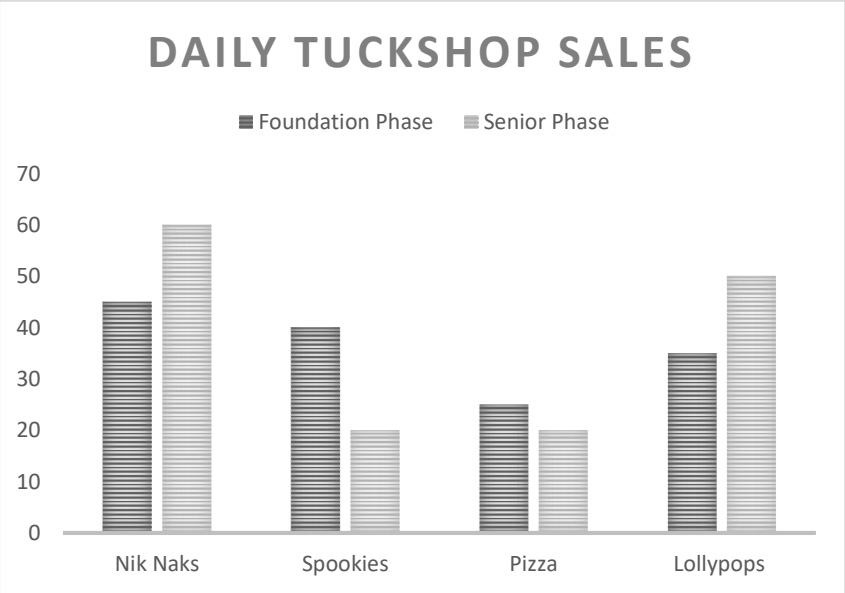
B) Increasing / decreasing / constant

1.2) Draw a **line** graph of the rainfall in Cape Town over a certain year. Use the rubric to assist you.

Month	J	F	M	A	M	J	J	A	S	O	N	D
Rainfall (mm)	10	5	3	12	30	76	90	70	50	35	20	12

Element	**Marks available**	**Marks awarded**
Graph title	(1)	
Correct independent variable and units	(1)	
Correct dependent variable and units	(1)	
Correct use of line graph style	(1)	
Correct data points plotted	(1)	
Total:	**5**	

2) Study the graph below and answer the questions that follow:



2.1) Which item is more popular with the Foundation Phase than with the Senior Phase?

_____ (1)

2.2) How many more lollypops do the learners in the Senior Phase buy, compared to the foundation Phase?

_____ (1)

2.3) How many items did the Foundation Phase buy altogether?

_____ (1)

3.1) Arrange the following marks in ascending order: 7 ; 15 ; 16 ; 6 ; 12 ; 19 ; 11 ; 3 ; 19

_____

(1)

3.2) What is the median mark? _____ (1)

3.3) What is the range of these marks?

_____ (1)

3.4) Calculate the mean mark._____ (2)

4) A coin is tossed ten times. It landed on heads four times. Calculate the relative frequency of it landing on heads. _____ (1)

TOTAL: 80 Marks