WCED EXTERNAL EXAMINATION

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Memorandum		**Grade: 7**
Mathematics Paper 2		**Time: 2 hours**
20 November 2019		**Total: 80**
Examiner: P. Swanepoel, et al		**Moderator: R. Alves**

SECTION A - Question 1

3

1.1) Identify the two quadrilaterals.

i) **Rectangle**   ii) **Parallelogram**   **Both correct =✓ (no half marks)**   (1)

1.2) Give one <u>similarity</u> between the two quadrilaterals.

Both quads or both have opposite sides equal ✓   (1)

1.3) Give one <u>difference</u> between the two quadrilaterals.

Rectangle has two lines of symmetry✓. Parallelogram has none✓   (1)

Question 2

19

2) Study the triangles and answer the questions that follow:
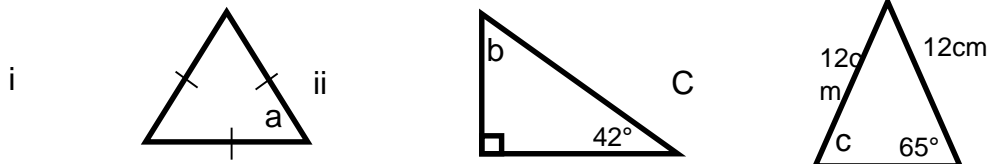
2.1) Identify the following triangles and give a reason for your answer:

i: **Equilateral ✓**   Reason: **All Sides are the same length✓**

ii: **Right angled✓**   Reason: **One right angle✓**

iii: **Isosceles✓**   Reason: **Two sides/angles are equal✓**   (3 × 2 = 6)
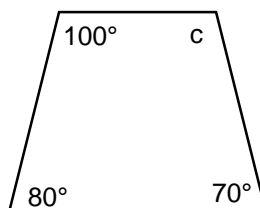
2.2)   Calculate the size of angle a-d:

a= **60°✓**   c= **65°✓**

b=**48°✓**   d= **150°✓**   (4 × 1 = 4)

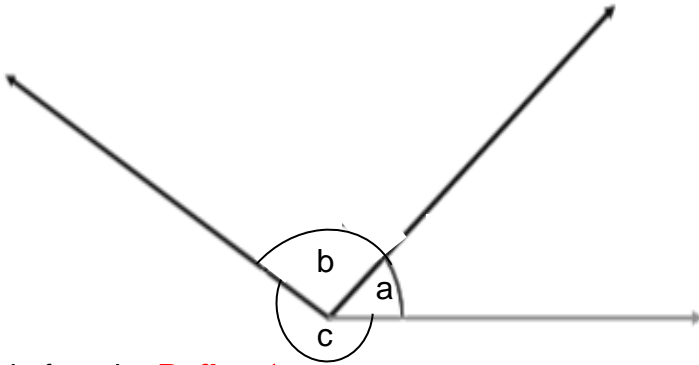2.3) Calculate the missing angles in the following diagrams:
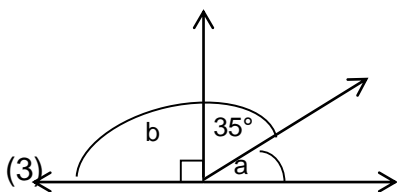
a) **55°✓**

b) **90°✓**

c) **60°✓**

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

a) Size: **49°** (allow a **1°** variance)

Kind of angle: **Acute✓**

b) Size: **94°** (allow a **1°** variance)

Kind of angle: **Obtuse✓**

c) Size: **217°** (allow a **1°** variance)
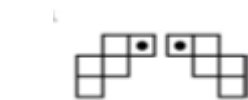
Kind of angle: **Reflex✓**

(3 × 2 = 6)

Question 3

3.1) Complete the table below: (8)

12

3-D Object	Name	Number of edges	Number of faces	Number of vertices
	Pentagonal Prism	**15**	**7**	**10**
	Octagonal Pyramid	**16**	**9**	**9**

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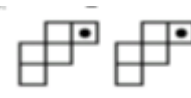
a)
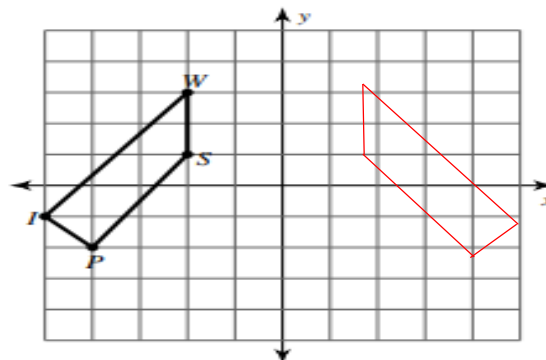
Reflection
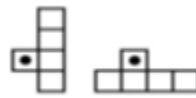
b)

Rotation

c)

Translation

(3)

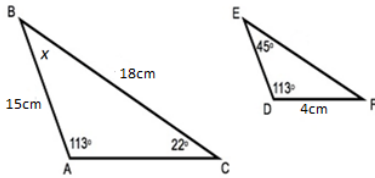**3.3** Draw the reflection of shape on the diagram below. (1)

Question 4

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

4.1) Give the length of EF: **6cm** (1)
4.2) Give the length of side AC: **12cm** (1)
4.3) Give the size of angle B: **45˚** (1)
4.4) Name the triangle according to the lengths of its sides: **Isosceles** (1)
4.5) Name the triangle according to the size of its angles: **Obtuse angled triangle** (1)

SECTION B - Question 1

5

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)
  325m – (100m + 72m + 77m)   OR   325m – 249m ✓**FOR SETTING UP COORECT OP**

  76m✓

1.2) The owner of this property wants to put a fence around it. (3)
  What would the owner pay if the cost of the fencing is R345/m?
  C.

		3	2	5
	x	3	4	5
		1	6	2	5
	1	3	0	0	0
	9	7	6	0	0
1	1	2	1	2	5

✓ FOR SETTING UP MULTIPLICATION OPERATION

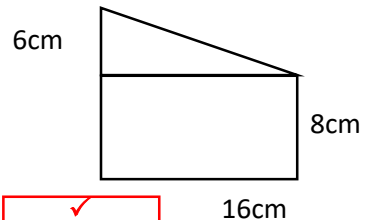✓ FOR MULTIPLYING ALL CORRECTLY

✓ FOR FINAL ANSWER (ADDITION)

Note!!! If learners added correctly with _ONLY ONE_ multiplication error, one mark will be allocated. 2 or more multiplication errors, no marks for correct addition!!

Question 2

5

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

A = ($\frac{1}{2}$ b x h) + (L x B)

= (8 x 6) + **(16 x 8)**   OR   **= (3 x 16)** + **(16 x 8)**

= 48cm² ✓   +   128cm²✓   = 48cm² ✓   +   128cm²✓

= 176cm² ✓   = 176cm² ✓

Question 3

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

TSA = 2 (L x B) + 2 (L x B) + 2 (L x B)   (* Accept any similar formula that works)

= 2(20 x 16) + 2(16 x 8) + 2(20 x 8) ✓

= 2(320) + 2(128) + 2(160) ✓

= 640 + 256 + 320 ✓

TSA = 1216 cm² ✓

16 cm

8 cm

20 cm
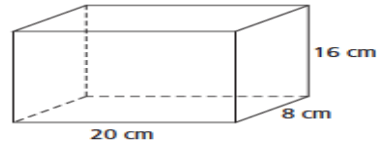
Question 4

4)   Study the cube given below and answer the questions that follow:
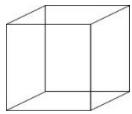
Side measurements = 40mm

4.1)   Calculate the **volume** of this cube: (3)
V = S x S x S or V = S³ ✓

= 40 x 40 x 40 ✓   **OR = 4 x 4 x 4**

= 64000mm³ ✓   **= 64cm³**

4.2)   How many **litres** of water can this object hold? **0,064 litres** ✓   .   (1)

4.3)   In your own words, explain the **difference between volume and capacity**.   (2)

Volume is is **the amount of <u>space</u>** ✓ **inside an object.**
Capacity is **how much substance can <u>fill</u>** ✓ **a space inside an object.**

Question 5

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

5.1)   Calculate the area of the shaded part.

10cm

Area (big rectangle) = L x B
= 18 x 10
= 180m² ✓

18cm

Area shaded part = 180m² - 40m²
= 140m² ✓

Area (small rectangle) = L x B
= 8 x 5
= 40m² ✓   **(Apply CA)**   (3)

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

Cost = 140m² x R30 ✓
= R4200 ✓   (2)

Section C - Question 1

1.1) Circle the correct term to describe the graph below in each block. (2 × 1 = 2)
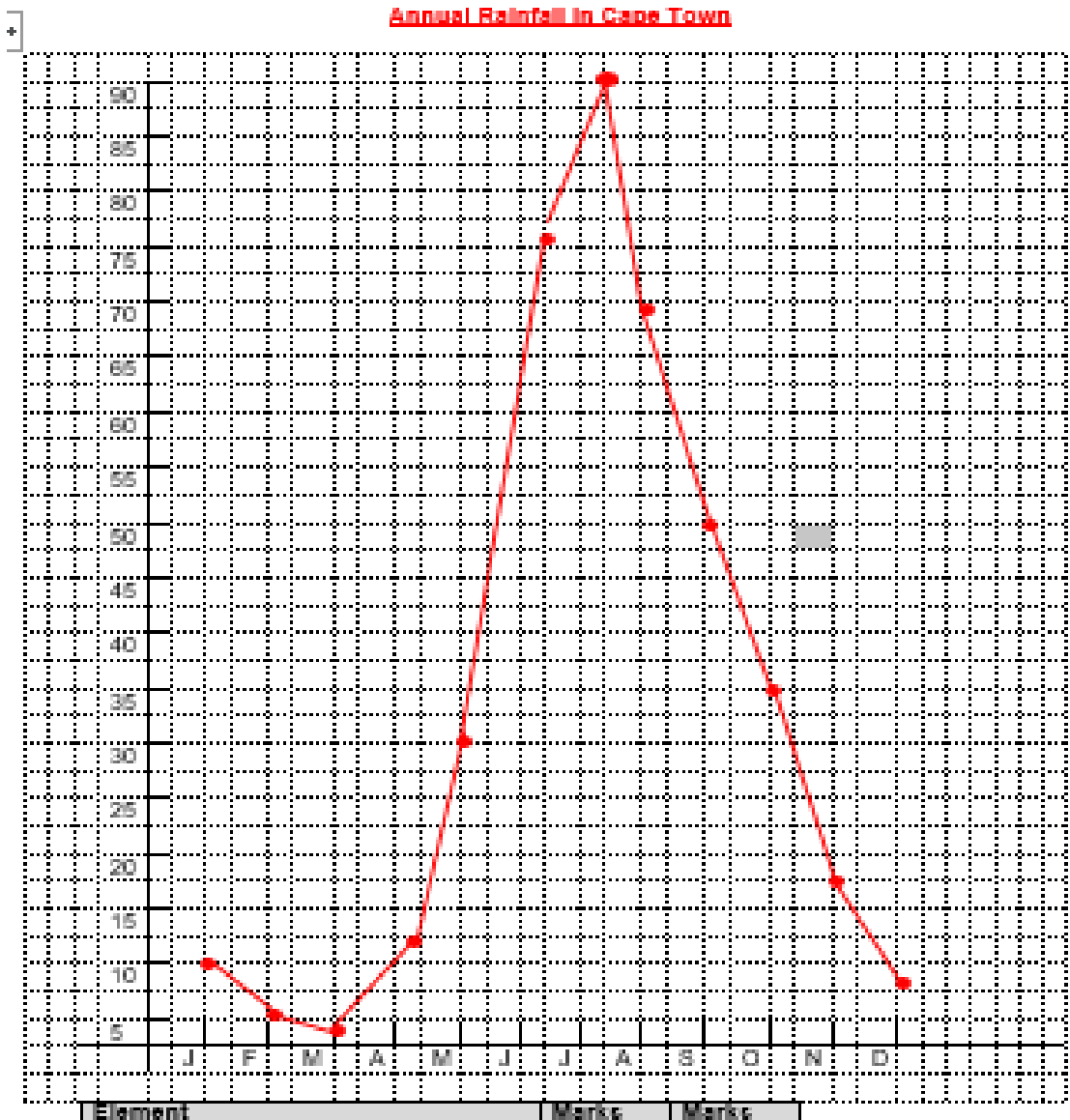
A) Linear / **non-linear**

B) Increasing / **decreasing** / constant

1.2) Draw a **line** graph of the rainfall in Cape Town over a certain year.

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

Annual Rainfall in Cape Town

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**	

Question 2

<div style="border:1px solid red; text-align:center">3</div>

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

Spookies ✓ (1)

2.2) How many more lollypops do the learners in the Senior Phase buy, compared to the foundation Phase?
50 – 35 = 15 ✓ (1)

2.3) How many items did the Foundation Phase buy altogether?
= 45 + 40 + 25 + 35 = 145 ✓ (1)

Question 3

<div style="border:1px solid red; text-align:center">4</div>

3.1) Arrange the following marks in ascending order: 7 ; 15 ; 16 ; 6 ; 12 ; 19 ; 11 ; 3 ; 19 (1)
= 3 ; 6; 7; 11; 12; 15; 16; 19; 19 ✓

3.2) What is the median mark? **12** ✓ (1)

3.3) What is the range of these marks? **= 19 – 3 = 16** ✓ (1)
3.4) Calculate the mean mark. (2)

= (3 + 6 + 7 + 11 + 12 + 15 + 16 + 19 + 19) / 9 ✓

= 108 / 9
= 12 ✓

Question 4

<div style="border:1px solid red; text-align:center">1</div>

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

10:4 5:2   **OR** $\frac{4}{10} = \frac{2}{5}$

TOTAL: 80 Marks