Mathematics Exam | Grade 8

Paper 2 | Bergvliet High School | Examiner: S Whitehorn

Marks: 60 | 15 November 2023 | Moderator: D Viljoen

Time: 75 Min

Name: _____

Teacher Eb Gr Jo Ly Sj St Vn Wn (circle your teacher)

Class B E R G V L I T (circle your class)

INSTRUCTIONS

Read the following instructions carefully before answering the questions.

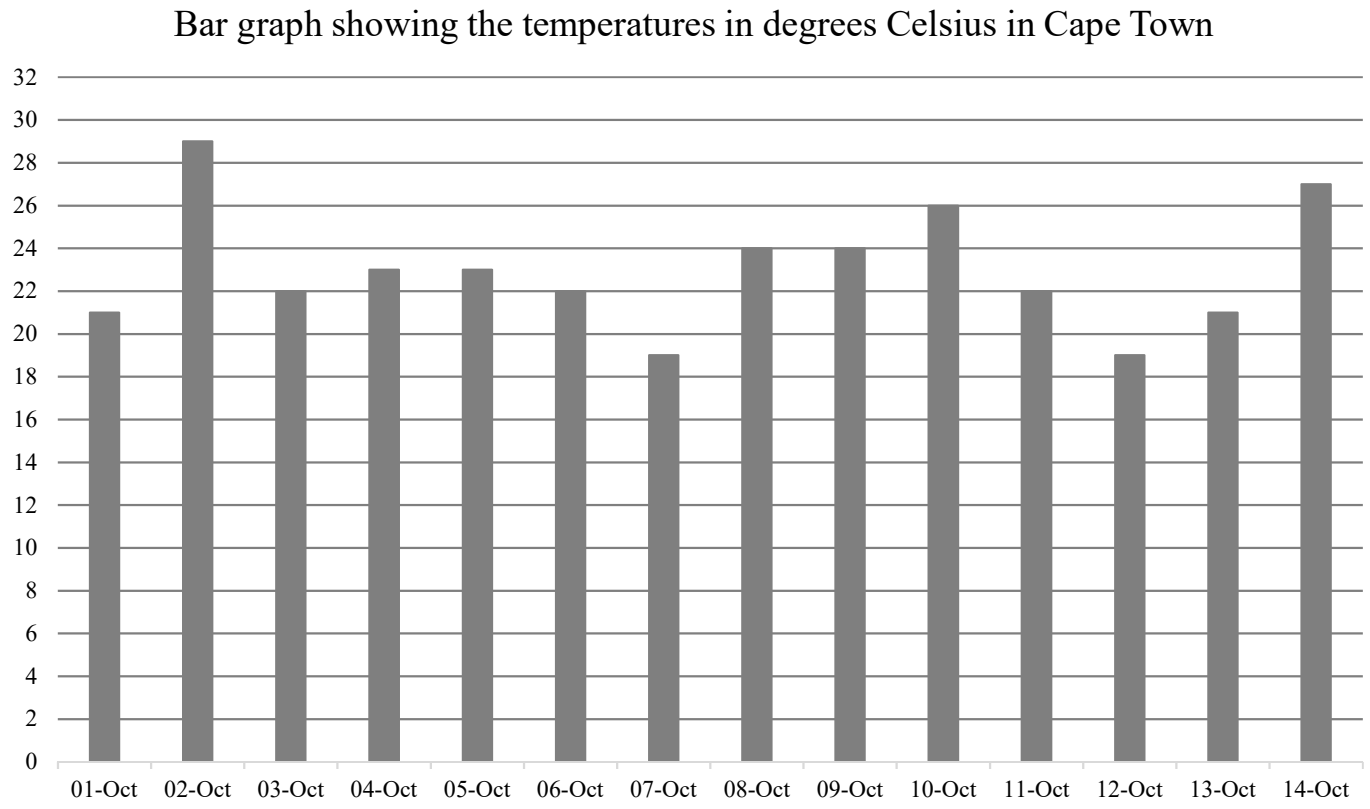
1. This paper consists of 10 pages and 4 questions.
2. Answer **ALL** the questions in this question paper.
3. Clearly show **ALL** calculations, diagrams et cetera that you have used in determining your answers.
4. Note that diagrams are not necessarily drawn to scale.
5. You MAY use an approved scientific calculator unless stated otherwise. If necessary, round off answers to TWO decimal places, unless stated otherwise.
6. Write neatly and legibly in blue or black pen.

Question	Mark	Learner Mark
1	9	
2	25	
3	9	
4	17	
Total	**60**	

Useful Formulae:	$A = lb$	$A = \frac{1}{2}bh$	$A = \pi r^2$	$C = 2\pi r$	$V = lbh$	$V = \frac{1}{2}bhd$

QUESTION 1

The following information shows the maximum temperatures (in $°C$) for Cape Town for the first two weeks of October 2023.



1.1. What was the maximum temperature for Cape Town in the first two weeks of October? (1)

1.2. Determine the modal temperature. (1)

1.3. Determine the mean temperature. (2)

1.4. Determine the median temperature. (3)

1.5. What was the range in temperatures for this 14-day period? (2)

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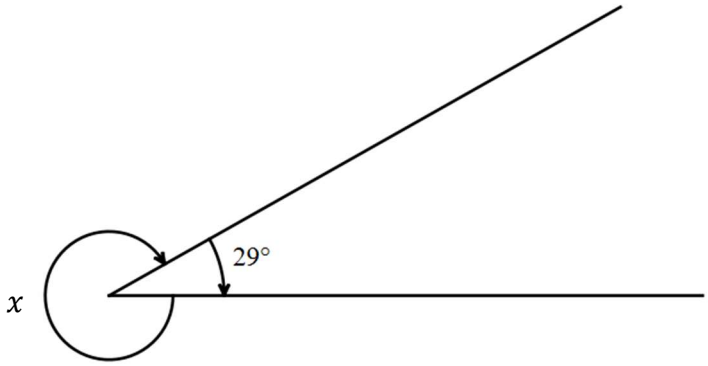
[9]

QUESTION 2

FOR ALL QUESTIONS, REMEMBER TO GIVE A REASON FOR YOUR ANSWER.

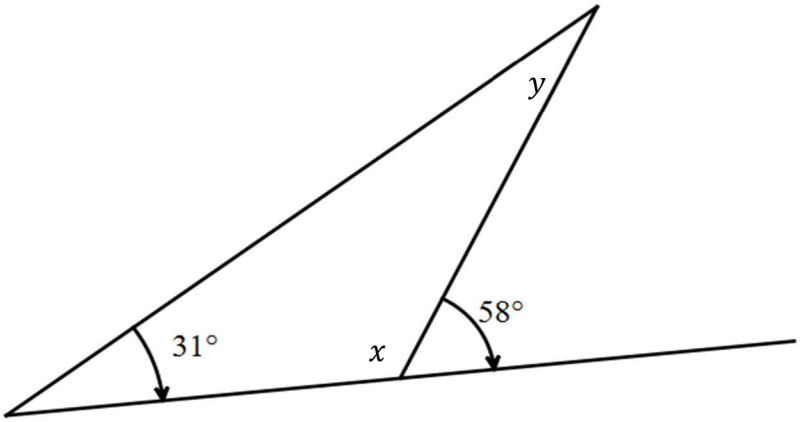
2.1. Determine the value of x, y and z in the following:

2.1.1. (2)



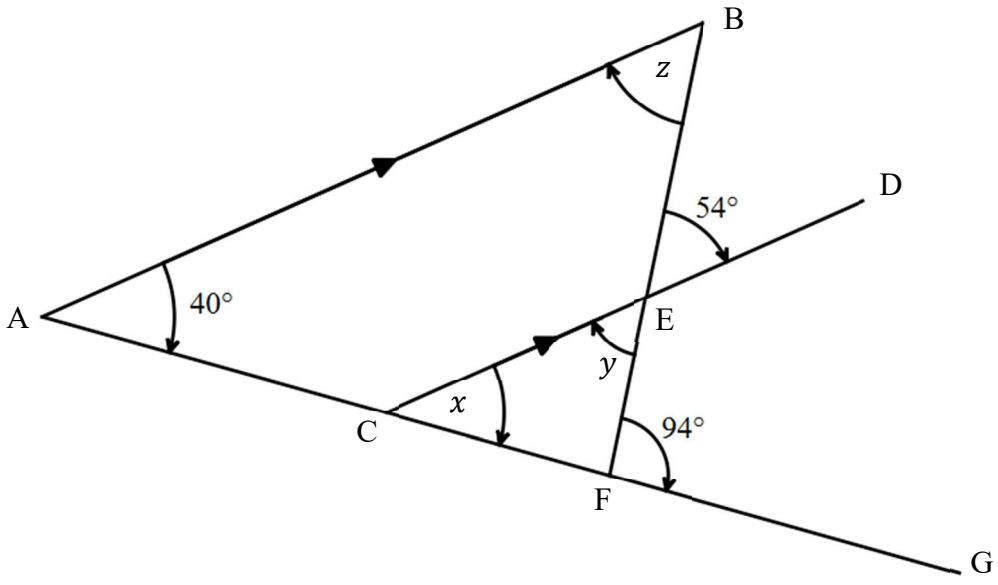
STATEMENT	REASON

2.1.2. (4)



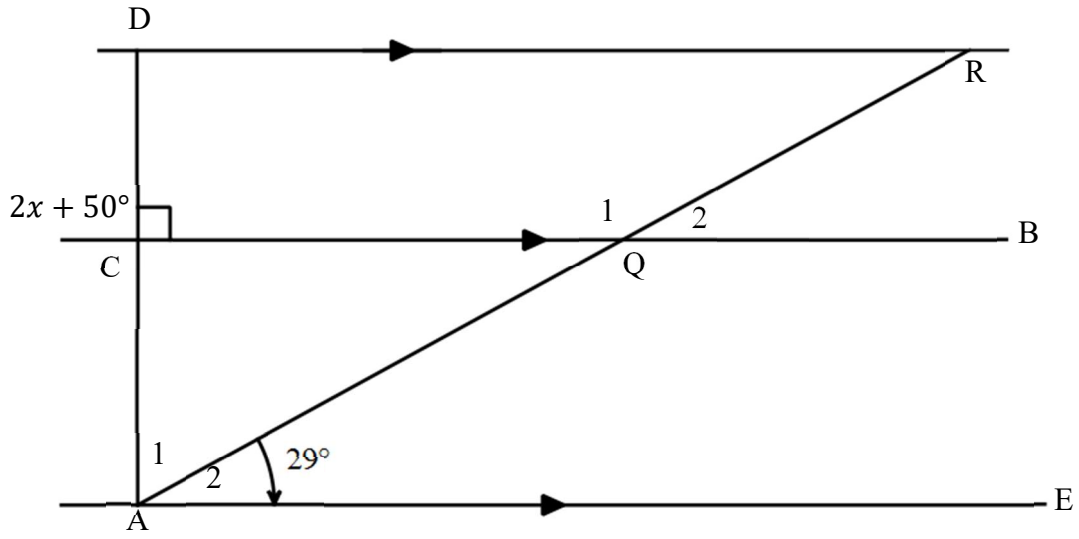
STATEMENT	REASON

2.1.3. (6)



STATEMENT	REASON

2.2. Consider the following:



2.2.1. Determine the value of x. (3)

STATEMENT	REASON

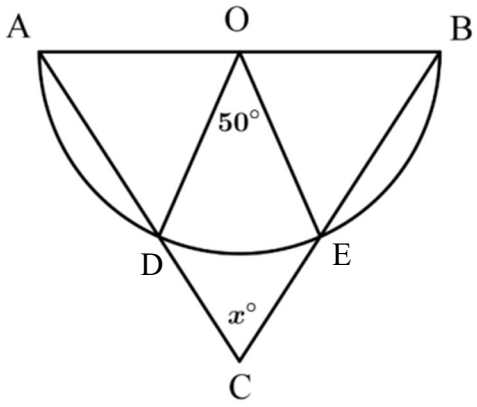
2.2.2. Determine the value of $A\hat{Q}B$. (2)

STATEMENT	REASON

2.2.3. In ΔACQ and ΔADR, state ***three*** pairs of corresponding angles that are equal to each other. (4)

STATEMENT	**REASON**

2.3. The diagram below shows isosceles triangle ABC with AC = BC. Side AB is the diameter of a semi-circle with centre O. $A\hat{O}D = B\hat{O}E$. Determine the value of x. (4)

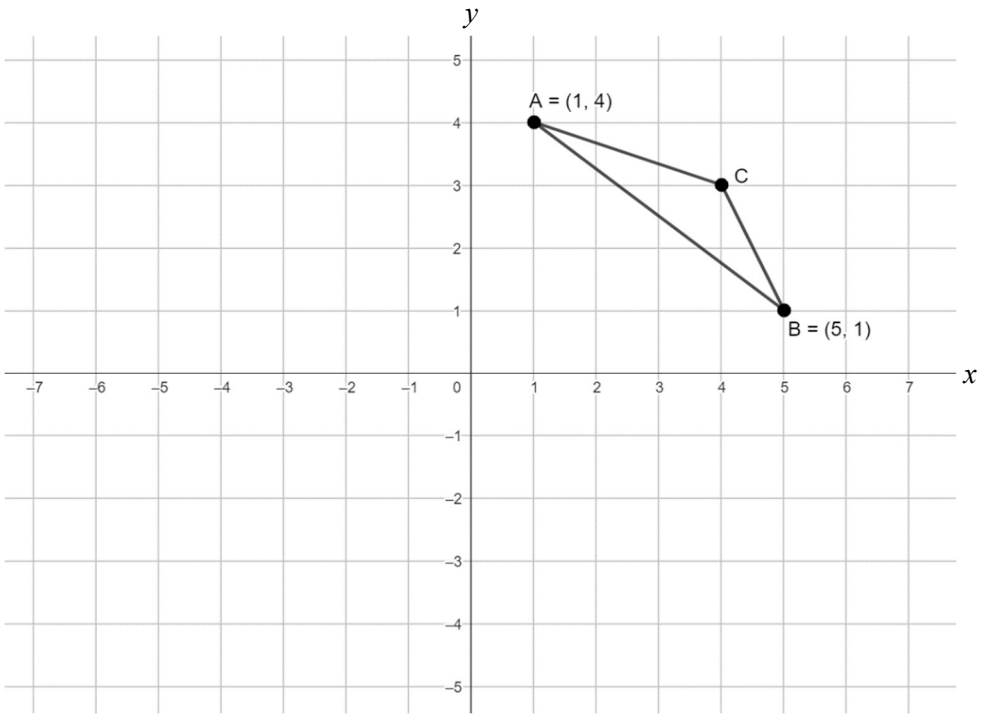


STATEMENT	**REASON**

[25]

QUESTION 3

3.1. Consider ΔABC plotted on the set of axes below:



3.1.1. ΔABC is translated 5 units left and 6 units down to form $\Delta A'B'C'$.
Plot the new image on the set of axes above, labelling all coordinates. (3)

3.1.2. Write down the coordinates of A'', the image of A when reflected about the *y*-axis. (2)

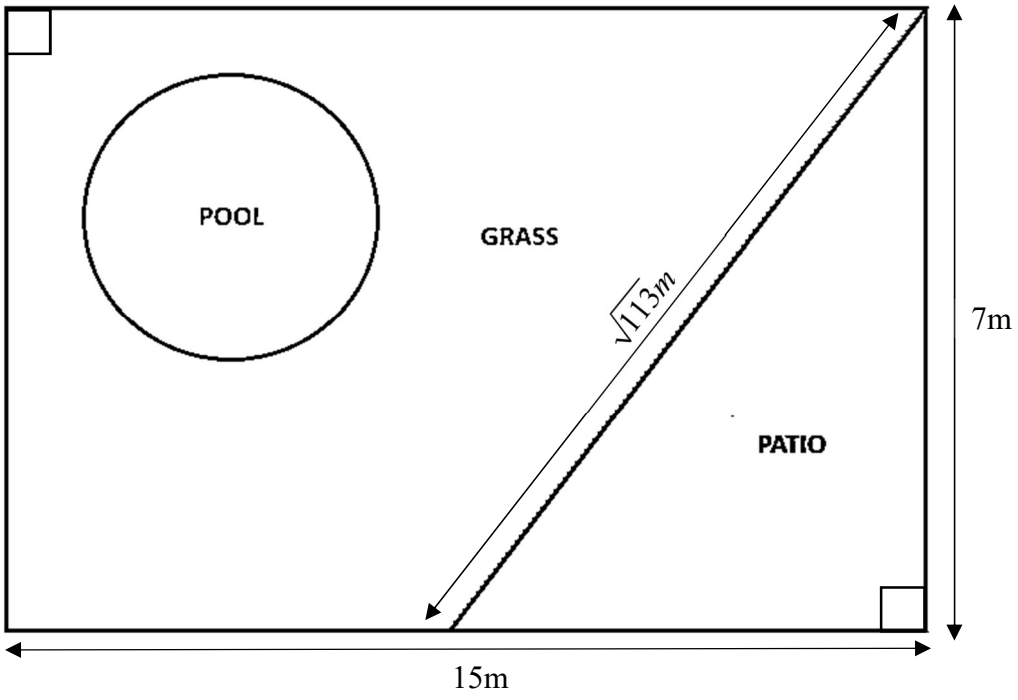
3.1.3. Are ΔABC and $\Delta A'B'C'$ considered to be similar, congruent or both? Give a reason for your answer. (2)

3.2. If the point $K(a;-3)$ is reflected over the *y*-axis and then translated 3 units up to form $K'(2;b)$, determine the values of *a* and *b*. (2)

[9]

QUESTION 4

Iman and Alex are helping Zoe redesign her garden, which is rectangular in shape. Their design is shown below. The pool has a radius of 2m:



4.1. A fence will be put around the pool. Determine the length of fencing needed. (2)

4.2. Determine the area of the patio. (4)

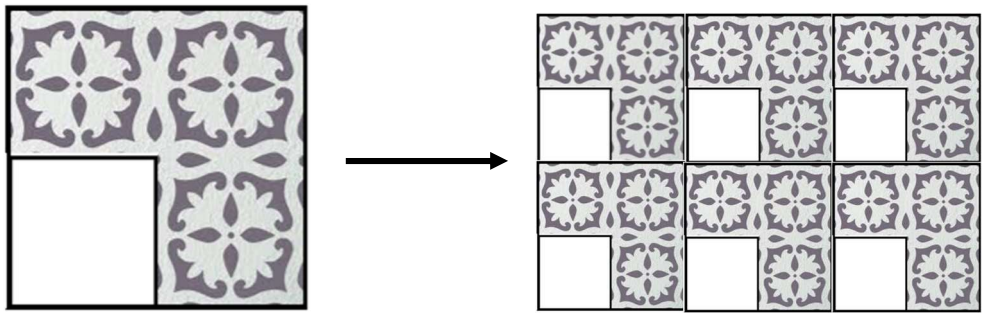
4.3. Determine the area of the garden that will be grass. (4)

4.4. Alex and Iman decide to surprise Zoe with a storage box for her braai tools. The design of the box is shown below:



Determine the total surface area of the storage container. (4)

4.5. Iman, Alex and Zoe have decided that the patio will be tiled. They will be using the following tiles. The tile is square with a smaller white square in the bottom left corner:



The perimeter of the patterned region is 24cm. What is the area of the whole tile? (3)

[17]