



LIMPOPO  
PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF  
EDUCATION

CAPRICORN NORTH DISTRICT

**MATHEMETICS TEST**



GRADE 9

TERM 3  
SEPTEMBER 2023

**Name:** .....

**Class:** .....

**Total: 75**

**Duration: 1H30**

Question	1	2	3	4	Total
Marks obtained					

**INSTRUCTIONS**

1. The paper consists of 9 pages (including cover page) of 4 questions
2. Answer all questions.
3. Use the question paper as your answer sheet.
4. Write neatly and legibly.
5. Show all your calculations unless stated otherwise

Question 1

Encircle only the letter that correspond with the correct answer

1.1 Which one of these properties is **NOT TRUE** for a parallelogram?

- A. Opposite angles are equal
- B. Opposite sides are equal and parallel
- C. Diagonals are equal
- D. Interior angles sum up to  $360^\circ$

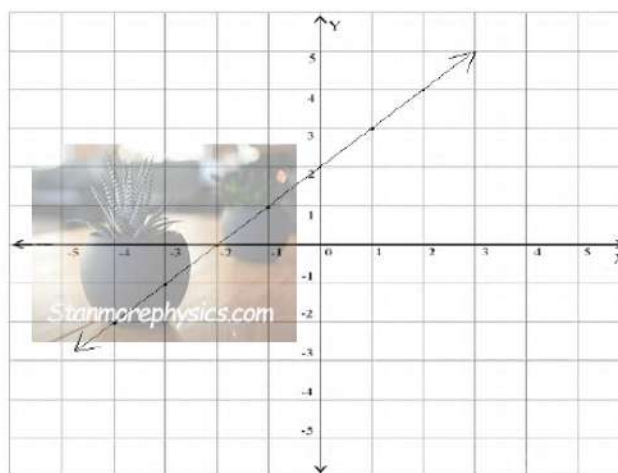
(1)

1.2 An equilateral triangle is.....

- A. A triangle with two sides equal
- B. A triangle with all sides equal
- C. A triangle with all sides not equal
- D. A triangle with one angle equal to  $90^\circ$

(1)

1.3 The equation of the straight line drawn below is:



- A.  $y = 2x - 2$
- B.  $y = x + 2$
- C.  $y = -2x + 2$
- D.  $y = -x - 2$

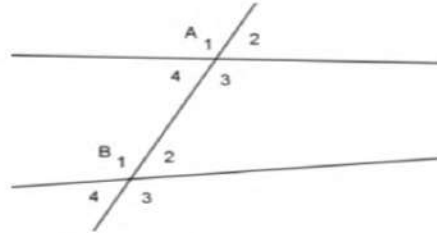
(1)

1.4 If  $p$  is a point on the line defined by  $y = x$ , then the coordinates of  $p$  are....

- A.  $(-3; 3)$
- B.  $(2; -2)$
- C.  $(-2; 2)$
- D.  $(-3; -3)$

(1)

1.5 Which statement is true about the figure below?

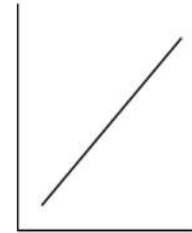
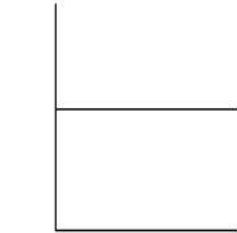
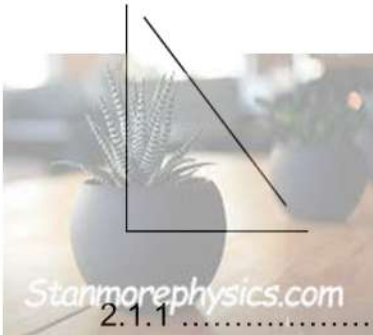


- A.  $\angle A1 = \angle B1$  Corresponding  $\angle s$   $\parallel$  lines
- B.  $\angle A1 = \angle B3$  Exterior alternate  $\angle s$   $\parallel$  lines
- C.  $\angle A1 = \angle A3$  Vertically opp.  $\angle s$
- D.  $\angle A1 + \angle A2 = 180^\circ$  co-interior  $\angle s$  of a triangle

(1)  
[5]

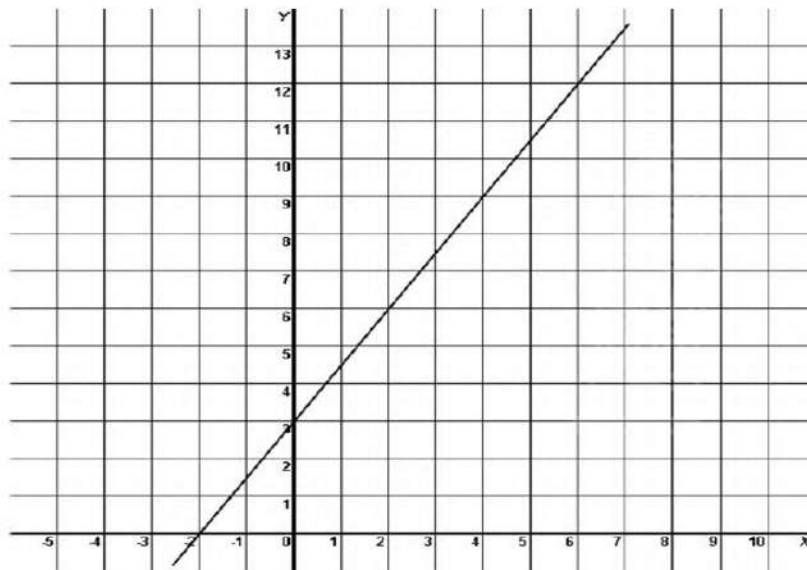
Question 2

2.1 State whether the following graphs are increasing, decreasing or constant



(3)

2.2 Read the graph below and answer the questions that follow



2.2.1 Determine the co-ordinates of the y-intercept.

.....

(1)

2.2.2 Determine the co-ordinates of the x-intercept  
..... (1)

2.2.3 Calculate the gradient of the graph. (3)



2.2.4 Determine the equation of the line in the form  $y = mx + c$  (2)

2.2.5 Determine the value of  $y$  if  $x = 2$  (Show the value by marking on the graph as well and label the point **A**.  
.....) (2)

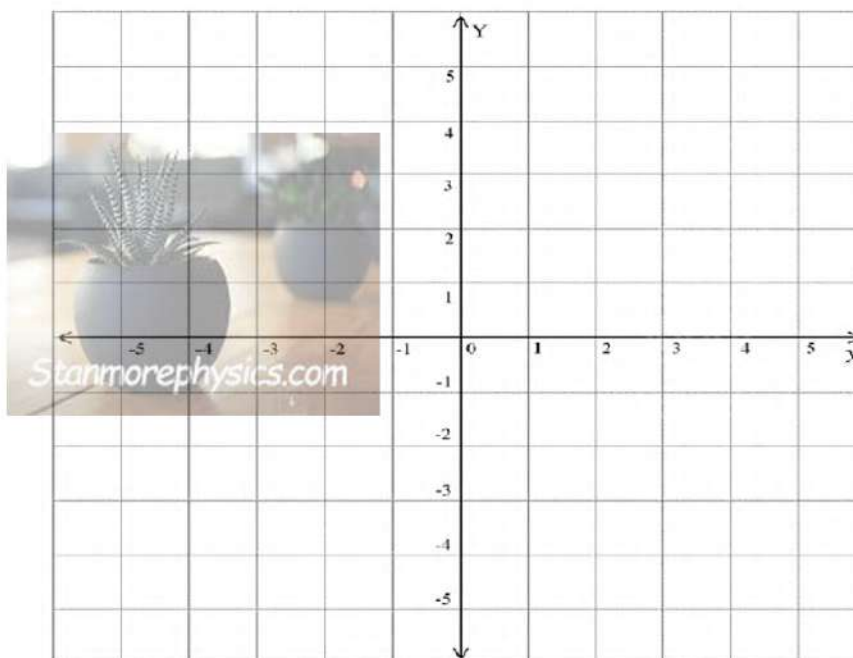
2.3 Given the formula  $y = -2x + 1$ ,

2.3.1 Complete the table below using the given formula

$x$	-1	0	$\frac{1}{2}$	1
$y$				

(4)

2.3.2 Plot the points for the table above on the cartesian plane below and draw the graph



(3)

2.4 Complete the table below:



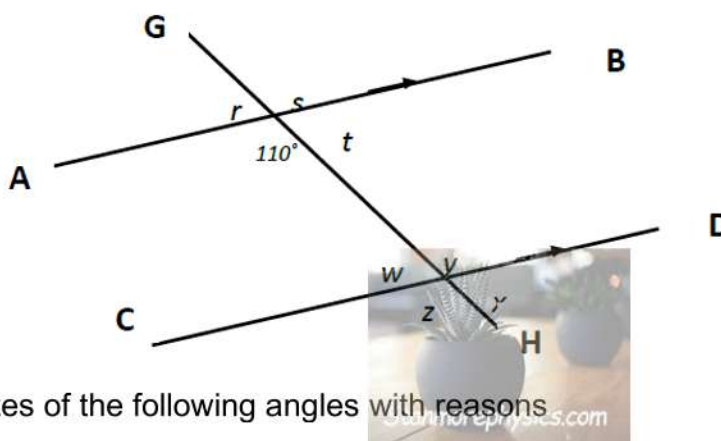
	Gradient		y- intercepts		Equation: $y= mx + c$
	$m = 4$		$c= -6$	<b>2.4.1</b>	$y = 4x - 6$
	$m = -5$		$C = -8$		$y = \dots\dots\dots$
<b>2.4.2</b>	$\dots\dots\dots$	<b>2.4.3</b>	$\dots\dots\dots$		$y= 2x$

(3)

[22]

**Question 3**

Consider the parallel lines below. AB and CD are cut by a transversal line GH.



3.1 Find the sizes of the following angles with reasons

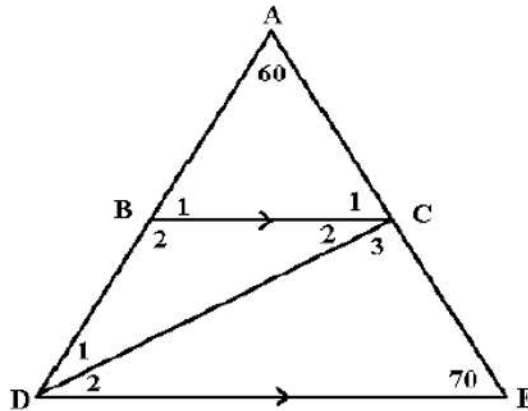
3.1.1  $w = \dots\dots\dots$  [  $\dots\dots\dots$  ] (3)

3.1.2  $y = \dots\dots\dots$  [  $\dots\dots\dots$  ] (2)

3.1.3  $s = \dots\dots\dots$  [  $\dots\dots\dots$  ] (2)



3.2 Study the diagram given below and answer the questions that follow:  
 $AB \parallel DE$  and  $\angle D_1 = \angle D_2$ . Determine the sizes of the following with reasons



3.2.1  $\angle D_2$

Statement	Reason

(2)

3.2.2  $\angle C_1$ ;  $\angle C_2$  and  $\angle C_3$

Statement	Reason

(6)

3.2.3  $\angle B_1$  and  $\angle B_2$

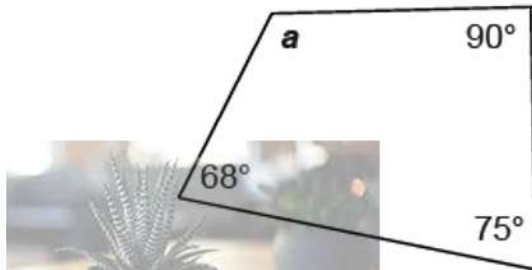
Statement	Reason

(4)

**[19]**

Question 4

4.1 Calculate the size of angle  $a$ .

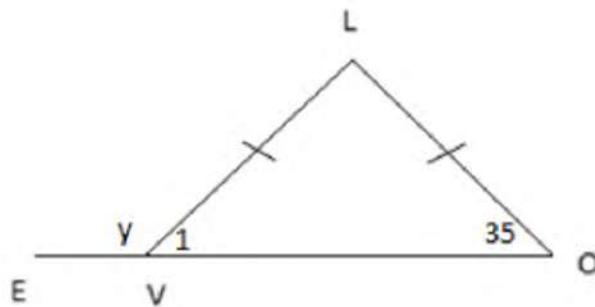


Statement	Reason
Stanmorephysics.com	

(3)

(3)

4.2 In  $\triangle LOV$ ,  $OV$  is produced to  $E$  and  $LV = LO$ .



4.2.1 Calculate the size of  $\angle L$  with reasons.

Statement	Reason

(3)

4.2.2 Calculate the value of  $y$  with reasons

Statement	Reason

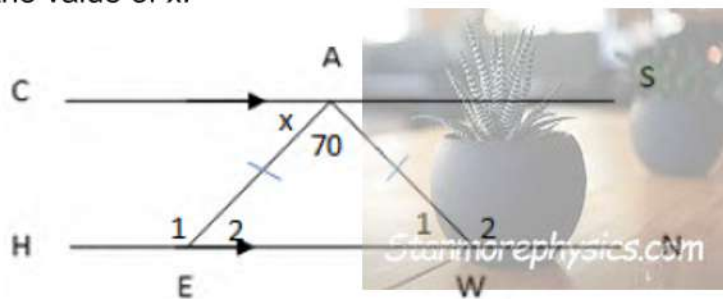
(3)

4.2.3 Classify with reasons  $\triangle LOV$

.....  
 .....

(2)

4.3 In the figure below,  $CS \parallel HN$ .  $\angle EAW = 70^\circ$ ,  $AE = AW$  and  $\angle CAE = x$ . Determine the value of  $x$ .



Statement	Reason

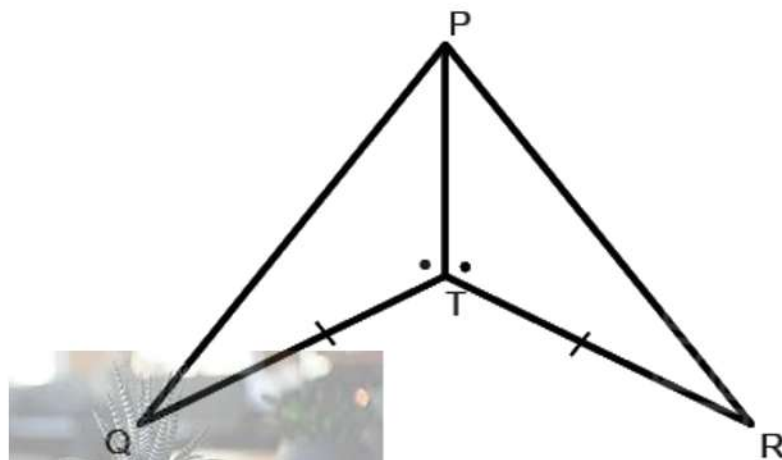
(4)

4.4

Statement	Reason

(3)

4.5 In the diagram below, prove that  $\triangle PTQ \cong \triangle PTR$ . Give reasons for your answer.

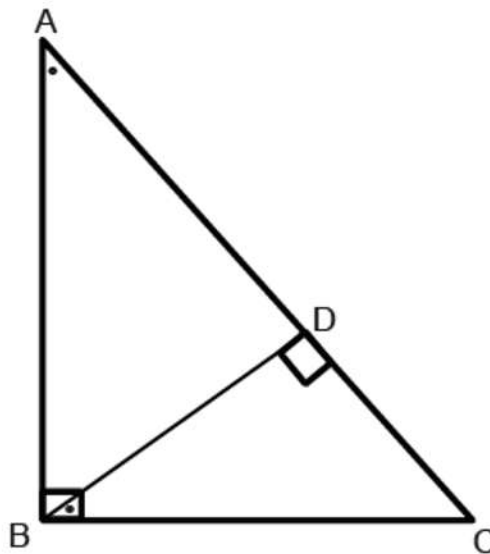


Statement	Reason

(4)



- 4.6 In the figure below  $\triangle ABC \sim \triangle BDC$ ,  $AB = 12$  cm,  $BC = 5$  cm and  $AC = 13$  cm. Calculate the length of  $BD$  rounded off to 1 decimal place.



Statement	Reason

(4)  
[29]

**TOTAL: 75**