



education

Department:

Education

PROVINCE OF KWAZULU-NATAL

ZULULAND DISTRICT: GENERAL EDUCATION AND TRAINING (GET)

Helping Our Schools Transform Little People into Future Giants

GRADE 09

MATHEMATICS
SEPTEMBER TEST
2024

Marks : 75

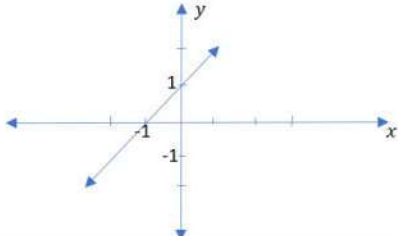
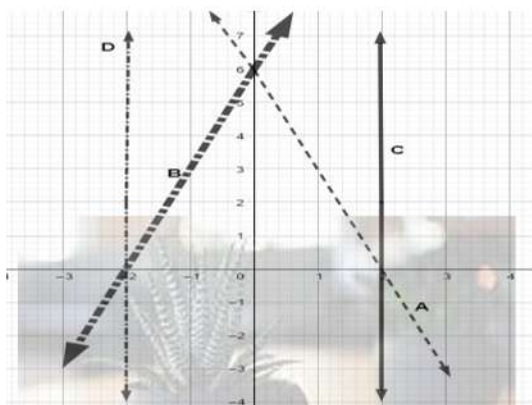
Duration : 1.5 hours

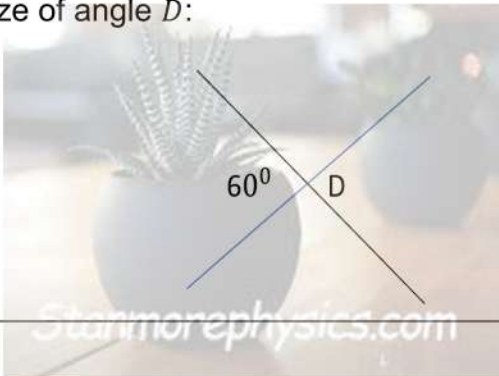
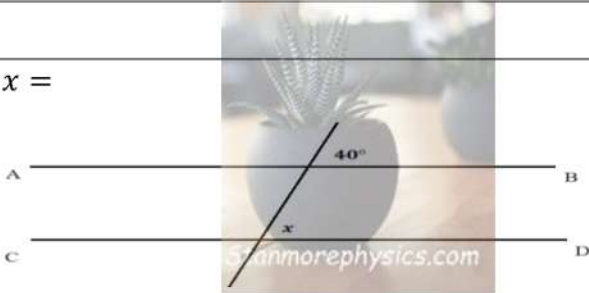
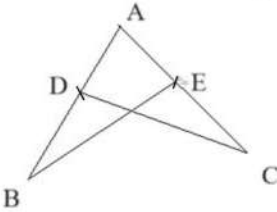
Read the following instructions carefully before answering the questions:

1. This question paper consists of **14 pages** including the cover page.
2. This question paper consists of **FOUR** questions. Answer **ALL** questions.
3. Clearly show **ALL** calculations that you have used in determining your answer.
4. Answer Questions 2 – 3 in the spaces provided.
5. Answer only will not necessarily be awarded full marks.
6. Diagrams are not necessarily drawn to scale.
7. Question 3 and Question 4 are geometry questions, **make sure you state a reason for your answer as marks are allocated for reasons.**

Name & Surname	
Class (e.g. 9A)	
School Name	
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Section A

Question 1		[10]
Four options are provided as answers to the following questions. Circle the letter corresponding to correct answer.		
1.1.	The equation of a straight line drawn below is _____	(1)
		
	A $y = x + 2$	
	B $y = x + 1$	
	C $y = 2x - 1$	
	D $y = 2x + 2$	
1.2.	The equation of the graph that passes through points $(\frac{3}{2}; 0)$ and $(0; 3)$ is:	(1)
	A $y = -2x + 3$	
	B $y = -2x - 3$	
	C $y = -3x - 2$	
	D $y = -3x + 2$	
1.3.	The linear graph for the equation $y = -3x + 6$ is for:	(1)
		
	A Graph A	
	B Graph B	
	C Graph C	
	D Graph D	

1.4.	Angles formed from perpendicular lines are.....		(1)
	A	Acute angles	
	B	Straight angles	
	C	Corresponding angles	
	D	Right angles	
1.5.	What is the size of angle D :		(1)
			
	A	180°	
	B	60°	
	C	120°	
	D	30°	
1.6.	If $AB \parallel CD$ then $x =$		(1)
			
	A	140°	
	B	100°	
	C	40°	
	D	180°	
1.7.	In the figure below $AB = AC$ and $AE = AD$. Why is $\triangle ABE \cong \triangle ACD$		(1)
			
	A	SAS	
	B	90° HS	
	C	SSS	
	D	AAS	

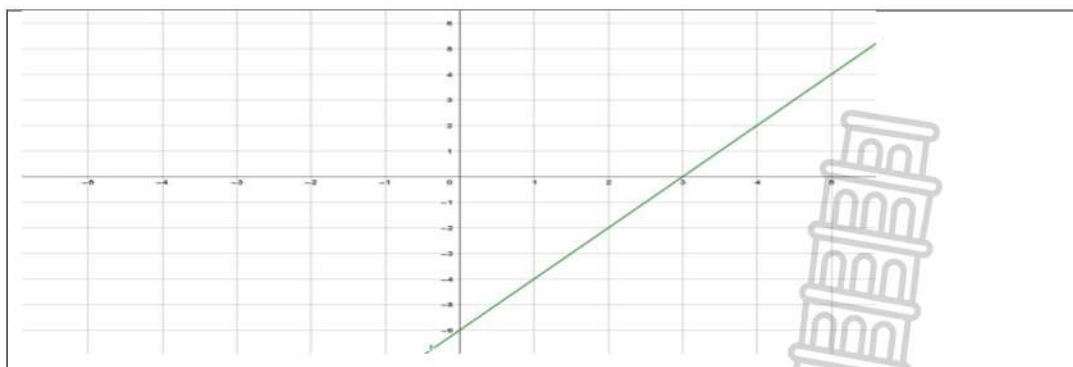
1.8.	The two triangles are similar if.....		(1)
	A	All angles are equal	
	B	Corresponding angles are equal	
	C	Corresponding sides are equal	
	D	Right angle, hypotenuse and one other pair of equal side	
1.9.	The property of a kite is:		(1)
	A	All sides are equal	
	B	Two pairs of adjacent sides are equal	
	C	Adjacent sides are perpendicular	
	D	Diagonals bisect each other	
1.10.	The property of a trapezium is:		(1)
	A	All sides are equal	
	B	Diagonals bisect each other	
	C	One pair of opposite sides are parallel	
	D	Both pairs of opposite angles are equal	

Section B

Question 2

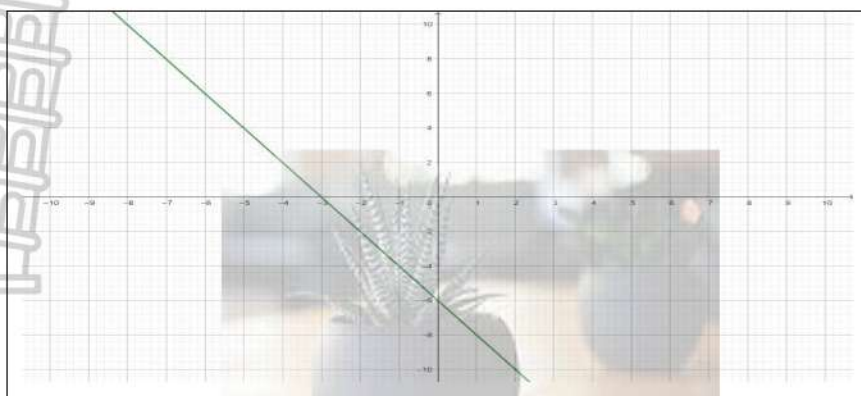
[17]

2.1. Given the graph below:



2.1.1.	Determine the x –intercept	(1)
2.1.2	Determine the y –intercept	(1)

2.2. Determine the gradient of the graph below:



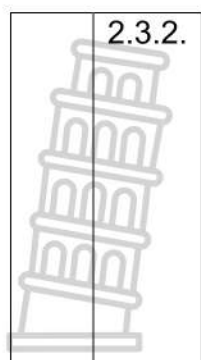
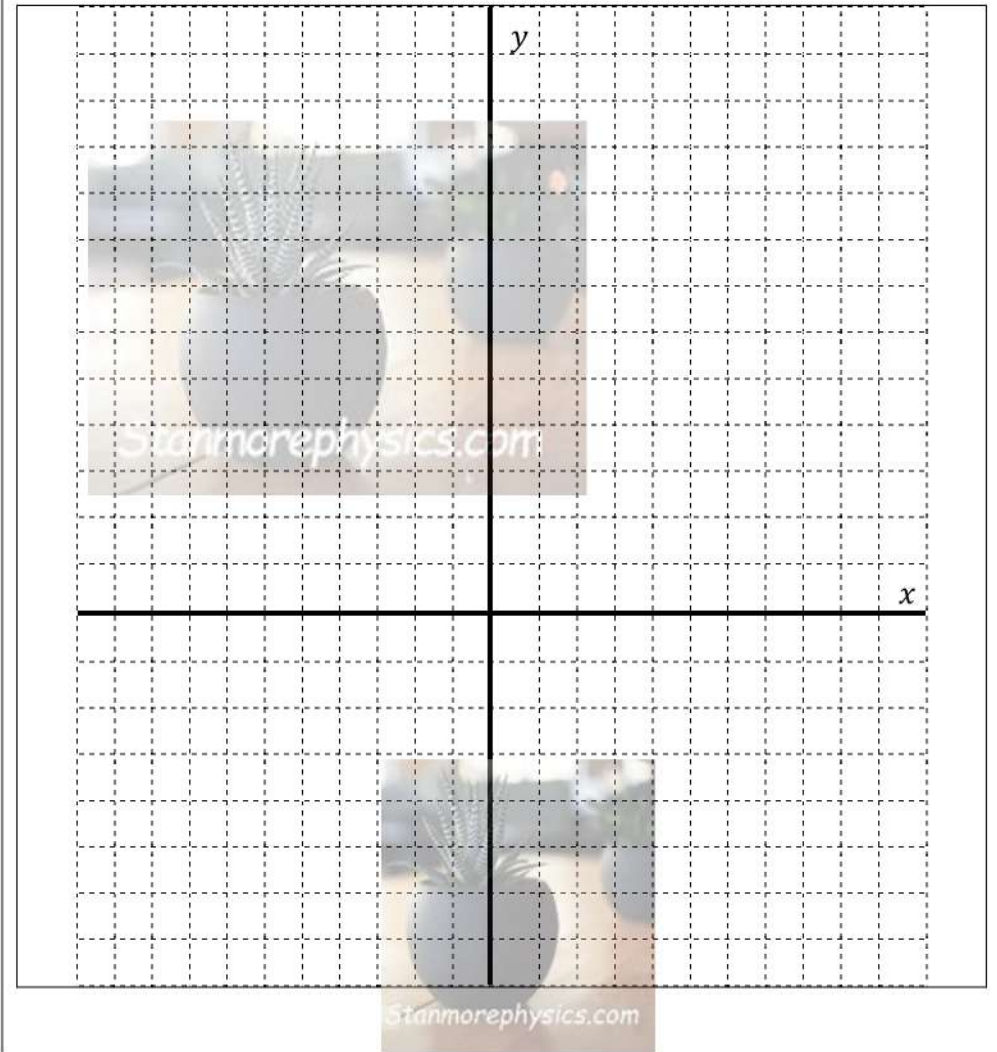
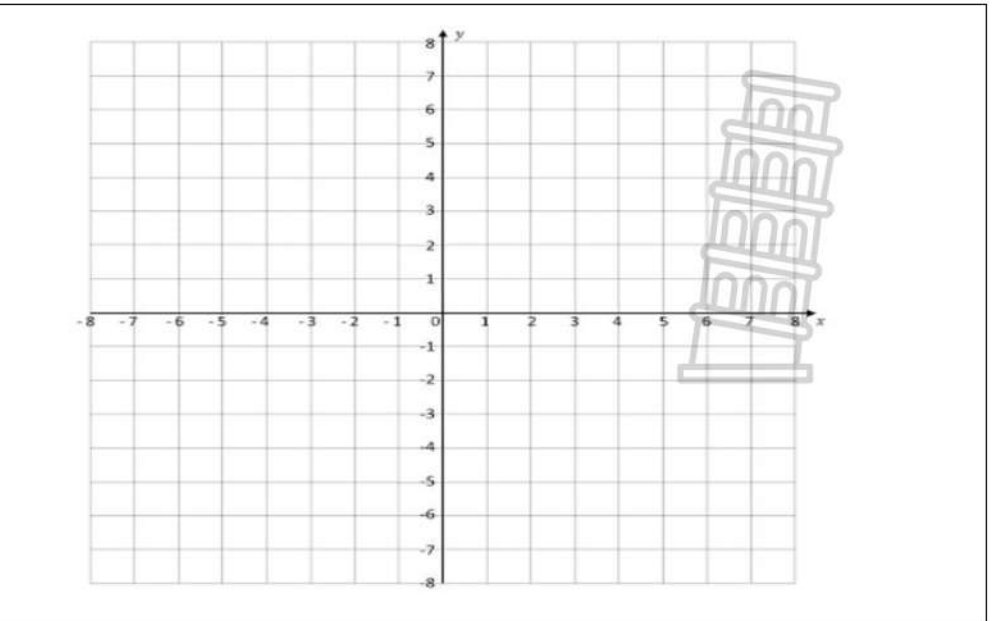
(3)

2.3. Study the table below and complete the it to find the values of y.

2.3.1.

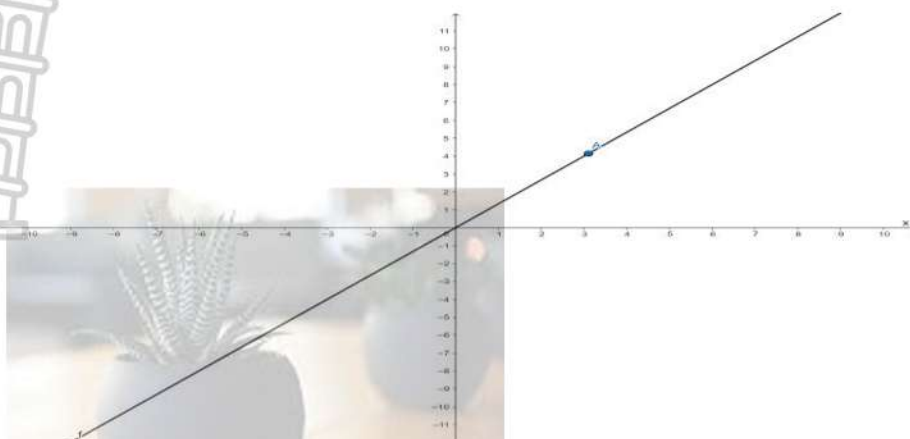
x	-2	-1	0	1	2
$y = 3x + 8$					

(2)

	2.3.2. Plot the graph of $y = 3x + 8$ in the cartesian plane below: 	(2)
2.4.	Draw the linear graph for equation $y = \frac{1}{2}x + 2$ 	(4)

- 2.5. Determine the equation of the graph below in a form of $y = mx + c$.
If A(3 ; 4).

(4)

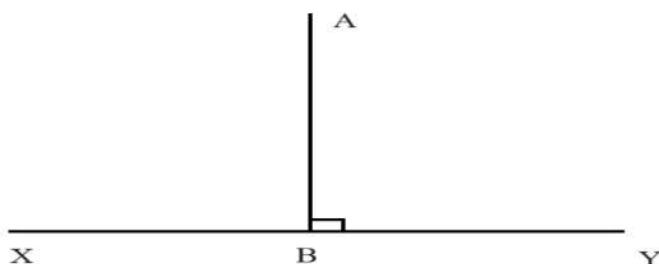


Question 3

[18]

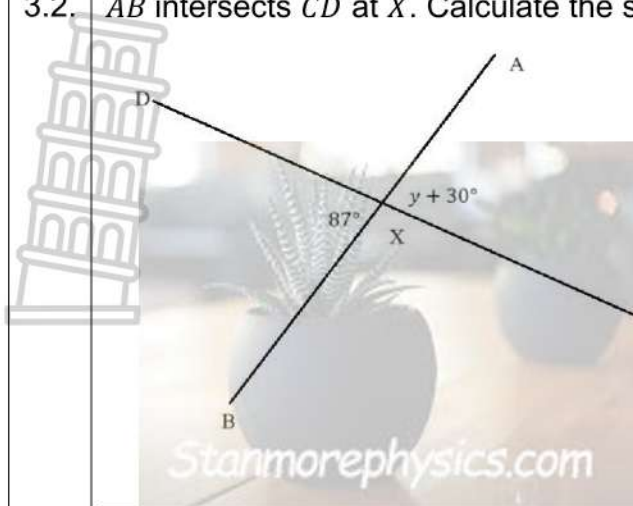
- 3.1. Given below $XY \perp AB$, determine with reasons the size of $\hat{XBA}$

(2)

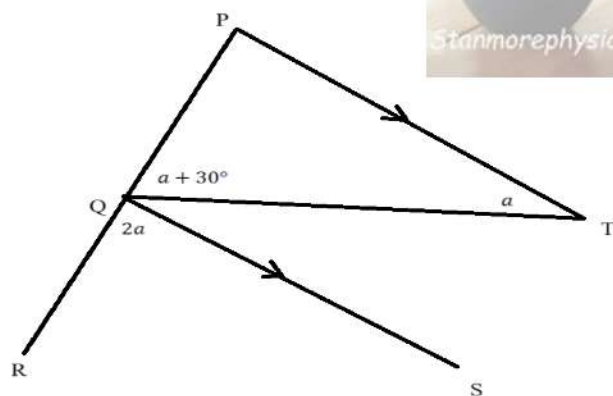


3.2. AB intersects CD at X . Calculate the size of y

(3)

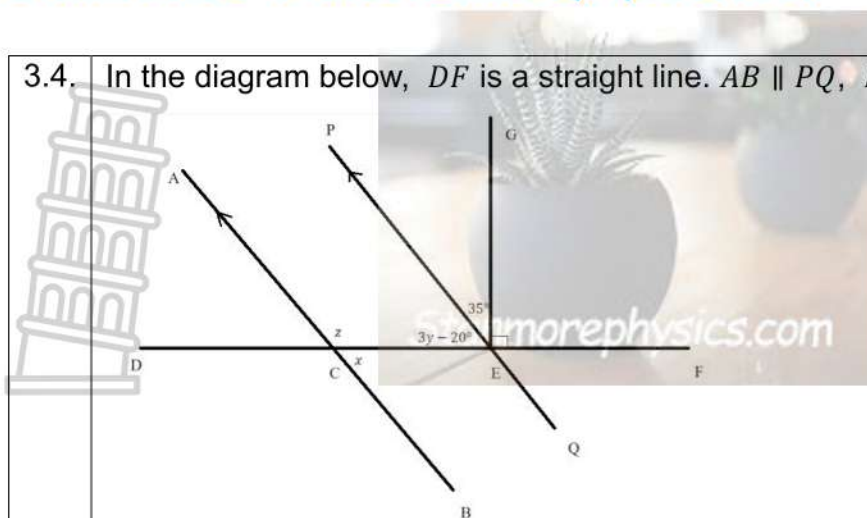


3.3. In the figure below, $PT \parallel QS$, $\widehat{PQT} = a + 30^\circ$, $\widehat{T} = a$, $\widehat{RQS} = 2a$, complete the table below to determine the value of a



	Statement	Reason	
3.3.1.	$\widehat{TQS} = \underline{\hspace{2cm}}$	$PT \parallel QS$, alt $\angle$'s	(1)
3.3.2.	$a = \underline{\hspace{2cm}}$	$\underline{\hspace{2cm}}$	(2)

3.4. In the diagram below, DF is a straight line. $AB \parallel PQ$, $EG \perp DF$



3.4.1. Determine the size of y .

(2)

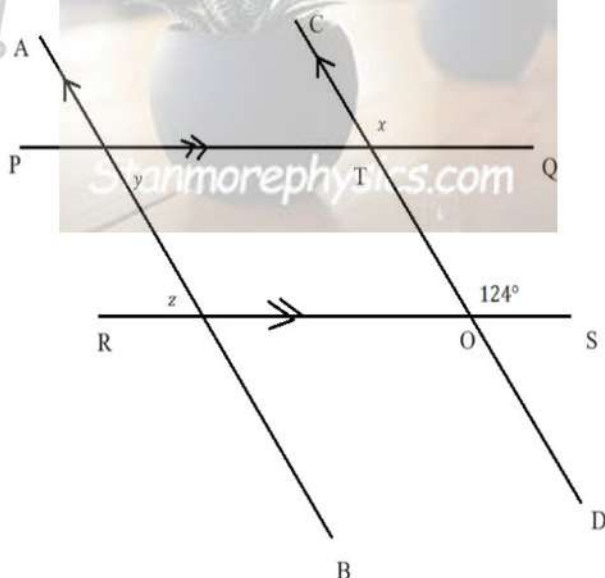
3.4.2. Determine the size of z .

(2)

3.4.3. Determine the size of x .

(1)

3.5. In the diagram below, $AB \parallel CD$, $PQ \parallel RS$, $\angle COS = 124^\circ$, complete the table below to determine the size of the unknown angles

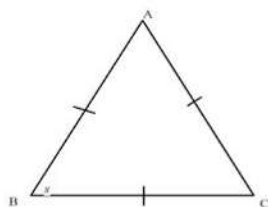


	Statement	Reason	
3.5.1.	$x =$ _____	$PT \parallel QS$, corr. $\angle$'s	(1)
3.5.2.	$y =$ _____	_____	(2)
3.5.3.	$z =$ _____	_____	(2)

Question 4

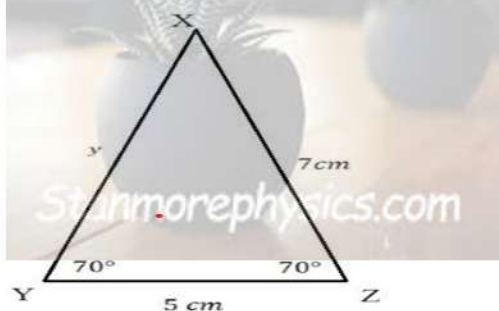
[30]

4.1. Given the $\triangle ABC$ below, determine the size of x



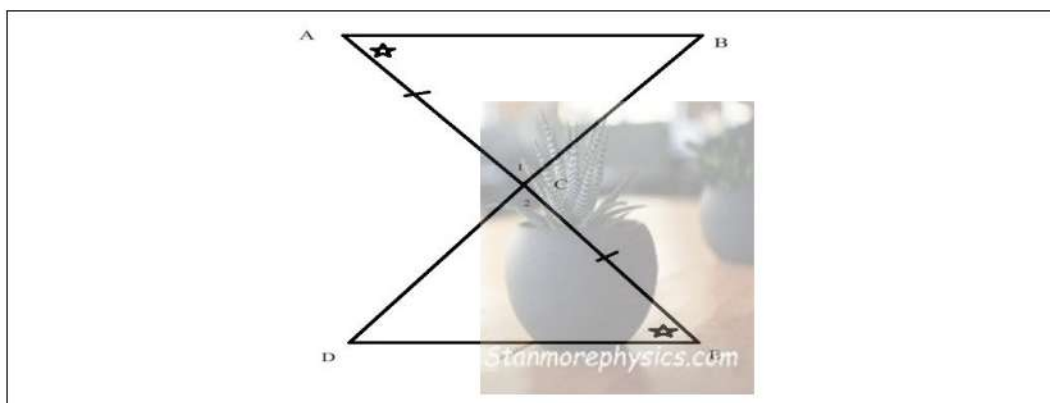
4.2. Given the $\triangle XYZ$ below, determine the length of y

(2)



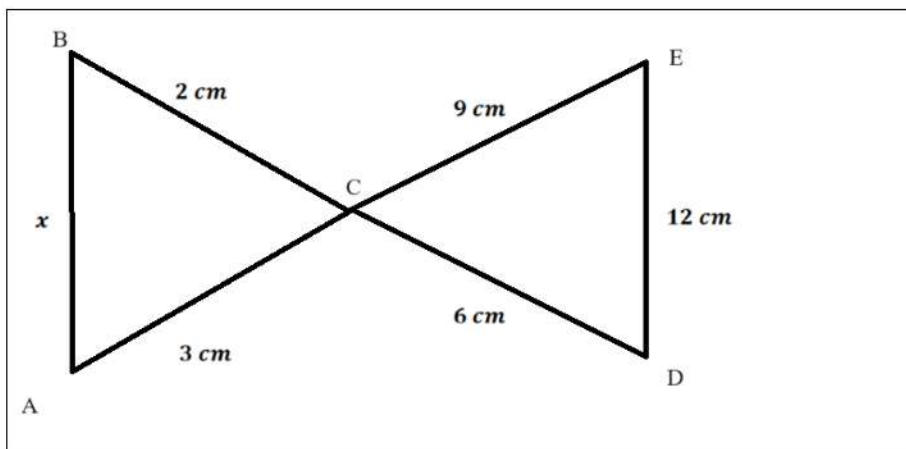
4.3. In the diagram below $AC = CE$, $\hat{A} = \hat{E}$, Prove that $\triangle ABC \equiv \triangle DEC$

(4)



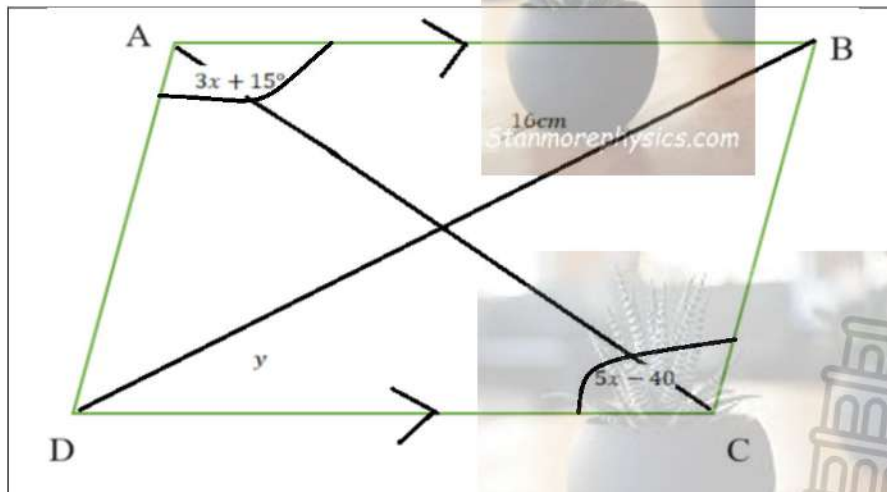
4.4. If $\triangle ABC \parallel \triangle DEC$, determine the size of x

(5)



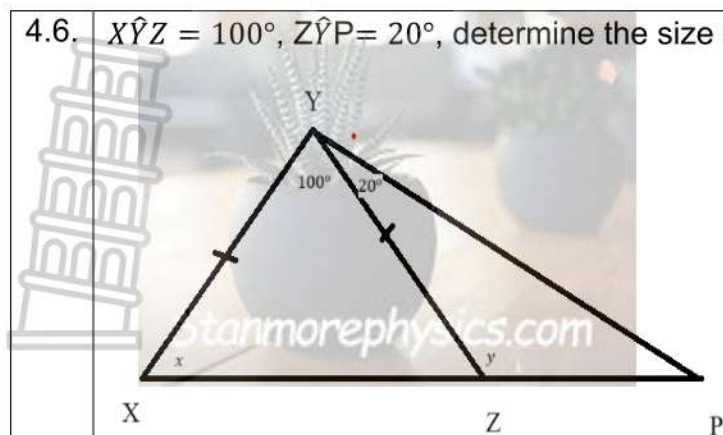
4.5. Determine the values of x and y from the diagram below if $AB \parallel DC$

(5)



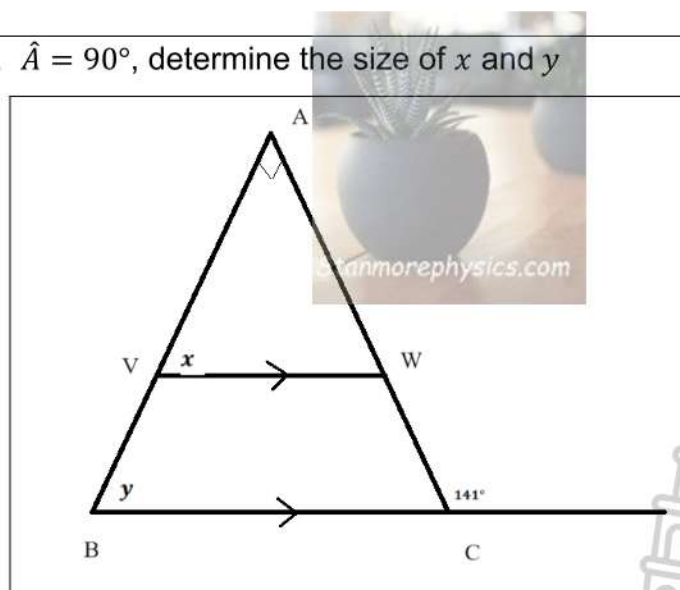
4.6. $\widehat{XYZ} = 100^\circ$, $\widehat{ZYP} = 20^\circ$, determine the size of x and y

(5)

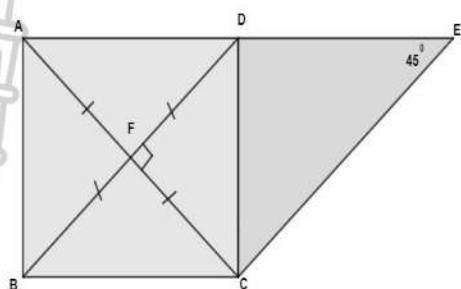
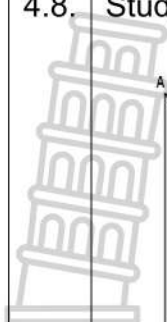


4.7. If $BC \parallel VW$, $\hat{A} = 90^\circ$, determine the size of x and y

(3)



4.8. Study the diagram below



4.8.1. Classify ABCD with at least one reason.

(2)

4.8.2. Determine the size of $\widehat{ADF}$.

(2)

