

Mathematics Department: Grade 8 (Integrated Mathematics I)
Final Summative Assessment 2024
Study Guide

DATE	MYP Criteria	Test Duration
May 2024	B & C	60 Minutes

Unit 3	• Lesson 10.4: Distance • Lesson 10.7: Midpoints • Lesson 11.1: Angles & Congruence • Lesson 11.2: Angle Relationships • Lesson 11.4: Transformations in the Plane • Lesson 11.5: Three Dimensional Figures • Lesson 12.6: Proving Angle Relationships • Lesson 12.7: Parallel Lines & Transversals
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PLEASE NOTE:

- All the power points of the lessons your teacher did is available on **Toddle or MS Teams**.
- Make sure that you prepare well.
- You **MUST** have your **own scientific calculator** and a **ruler** for the test.
- GOOD LUCK 😊

LESSONS 10.4 & 10.7: Distance and Midpoints in the Coordinate Plane**FORMULAS TO KNOW:**

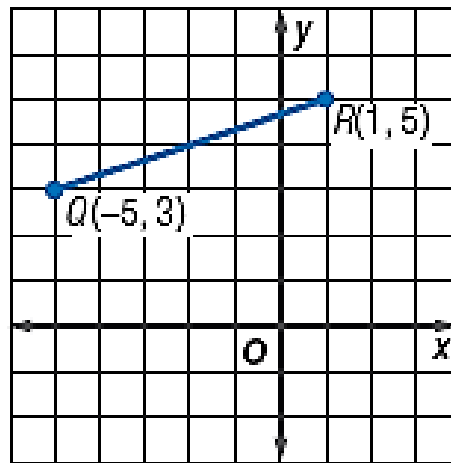
The Midpoint Formula

$$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

Distance Formula

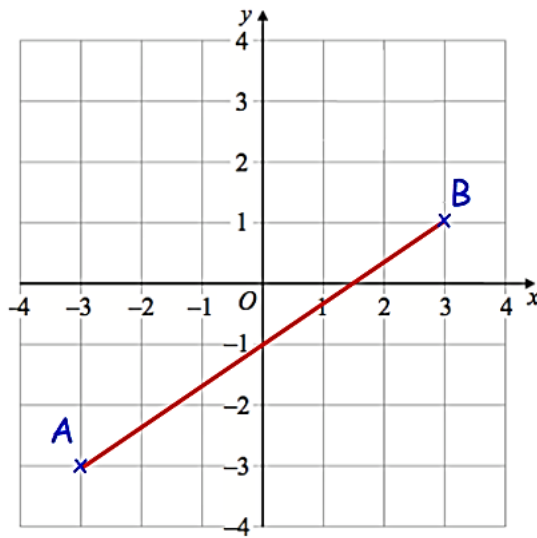
$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

1. On the cartesian plane below two points are given.



- a) Find the midpoint of the line Segment **RQ**
- b) Calculate the length of the line Segment **RQ**

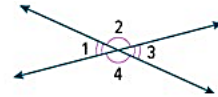
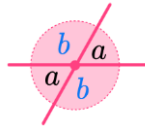
2. On the Cartesian Plane below calculate,



A) The midpoint of AB

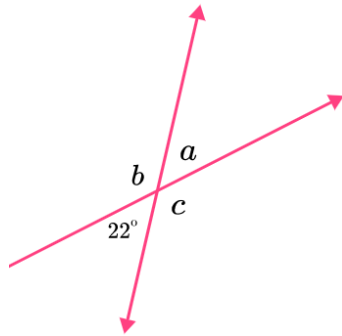
B) The length of AB

3. Find the coordinates of the midpoint of a segment with endpoints of (12, 2) & (7, -9) and calculate the length of the segment.

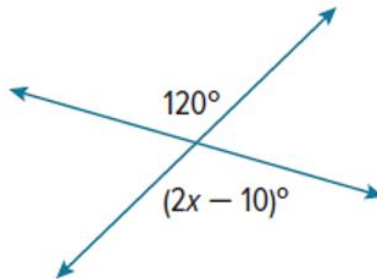
Lesson 11.1: Angles & Congruence**KEY FACT TO REMEMBER:****Vertical angles are equal**

$\angle 1$ and $\angle 3$ are vertical angles. $\angle 2$ and $\angle 4$ are vertical angles.

4. Find the value of each variable

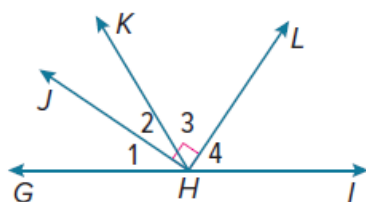


5. Find the value of x . What angle property did you use?



Calculation for x	Angle property
$x = \dots\dots\dots$	

7. If angle 1 is 33° and angle JHL is a right angle, find the missing angle 4 and state which angle property was used to get your answer.



Calculation for angle 4	Angle property used

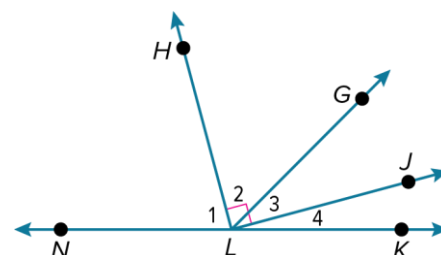
8. Find the missing angle x and state which angle property was used to get your answer.



Calculation for angle x	Angle property used

9. If angle 4 is 18° and angle JLH is a right angle, find the missing angle 1 and state which angle property was used to get your answer.

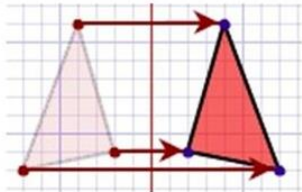
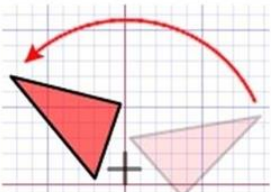
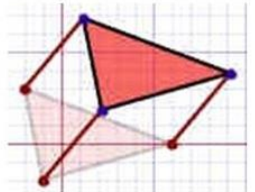
Calculation for angle 1	Angle property used



LESSON 11.4: TRANSFORMATIONS IN THE PLANE

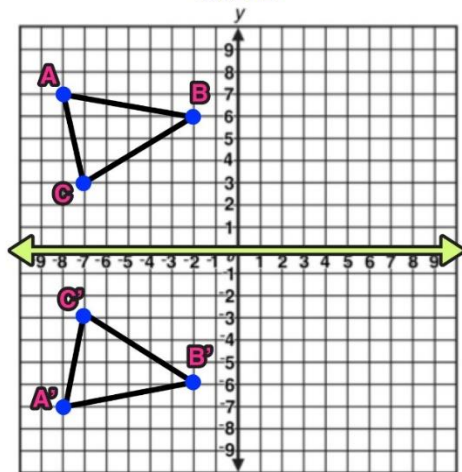
KEY CONCEPTS:

Three Rigid Transformations

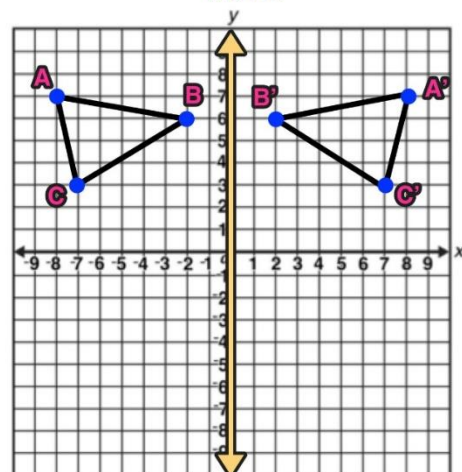
Reflection (flip)	Rotation (turn)	Translation (slide)
A transformation across a line, called the line of reflection. Each point and its image are the same distance from the line of reflection.	A transformation about a point P, called the center of rotation. Each point and its image are the same distance from P.	A transformation in which all the points of a figure move the same distance in the same direction.
		

Reflection over the x-axis and y-axis

Reflect $\triangle ABC$ Over the
X-Axis



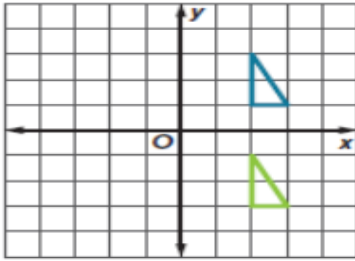
Reflect $\triangle ABC$ Over the
Y-Axis



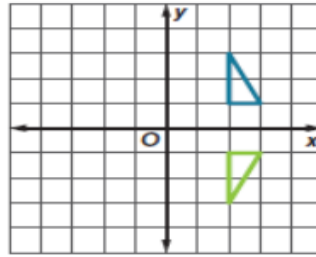
TYPE OF REFLECTION	Point of the pre-image (Before reflection)	Point of the image (After reflection)
Reflection about the x-axis	(x, y)	$(x, -y)$
Reflection about the y-axis	(x, y)	$(-x, y)$

10. Identify the type of rigid motion shown below as either a rotation, translation or reflection.

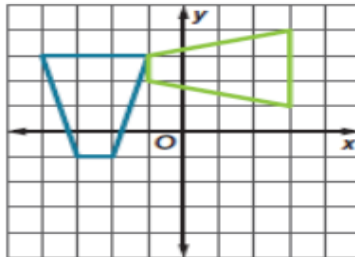
(i)



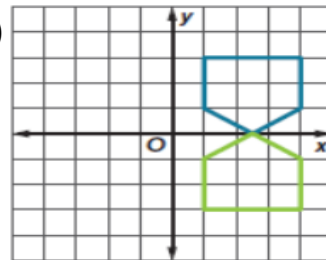
(ii)



(iii)



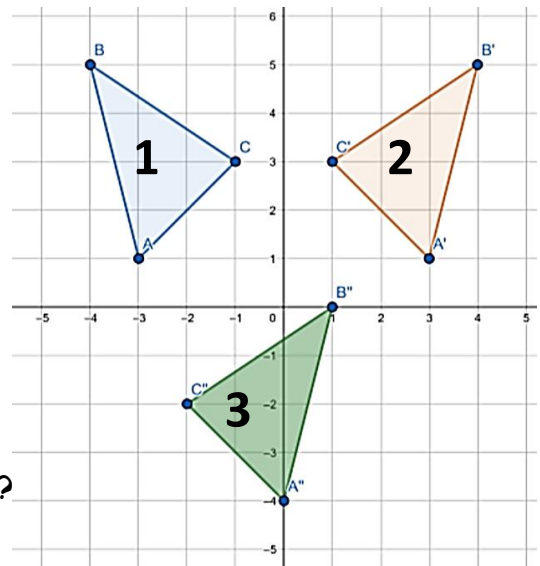
(iv)



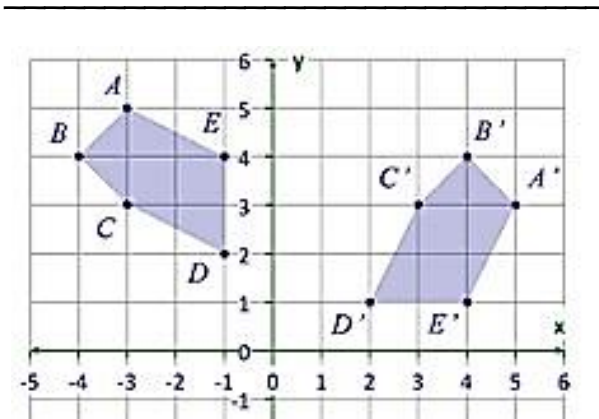
11. Name the type of transformation (Reflection/Rotation/Translation)

a) from 1 to 2 _____

b) from 2 to 3 _____

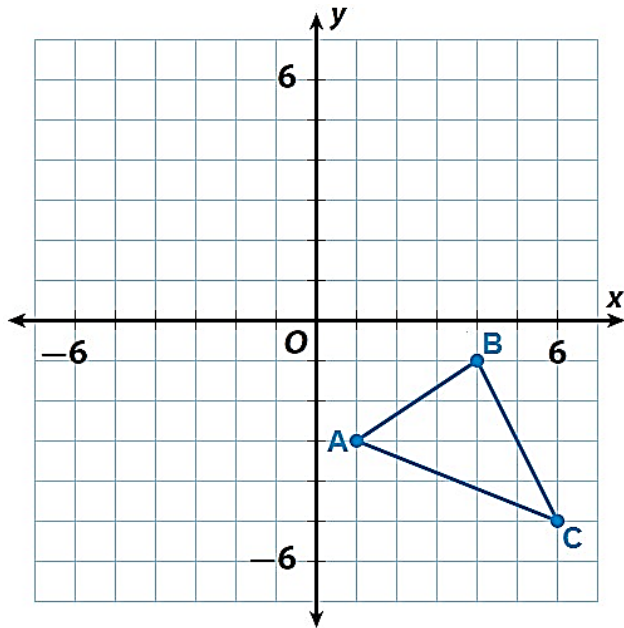


12. What type of transformation is shown below?



13. (i) Draw the image of $\triangle ABC$ after a reflection in the y -axis

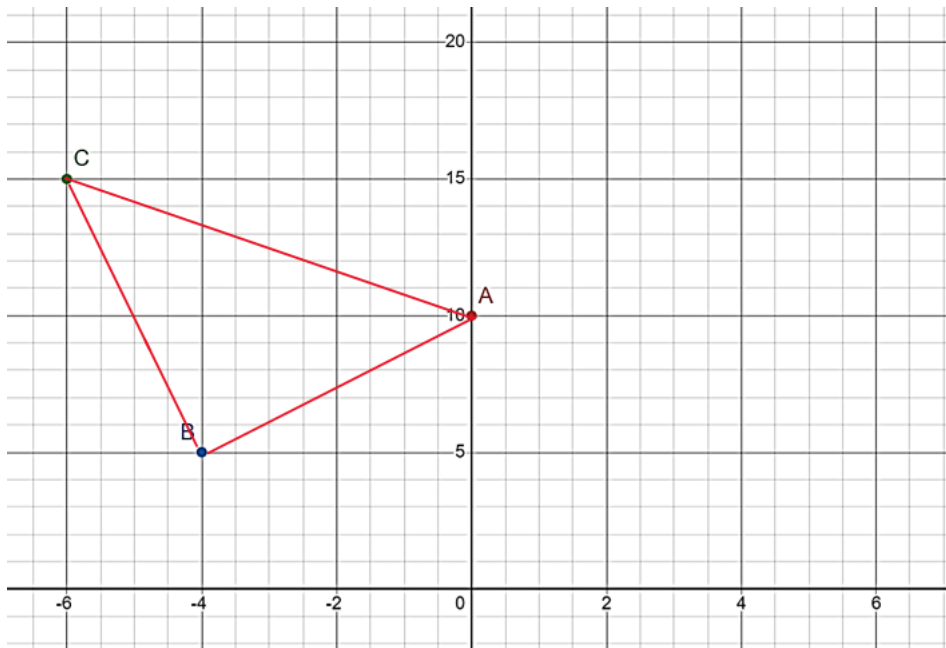
(ii) What are the **coordinates of A' , B' and C'** ?



A'	
B'	
C'	

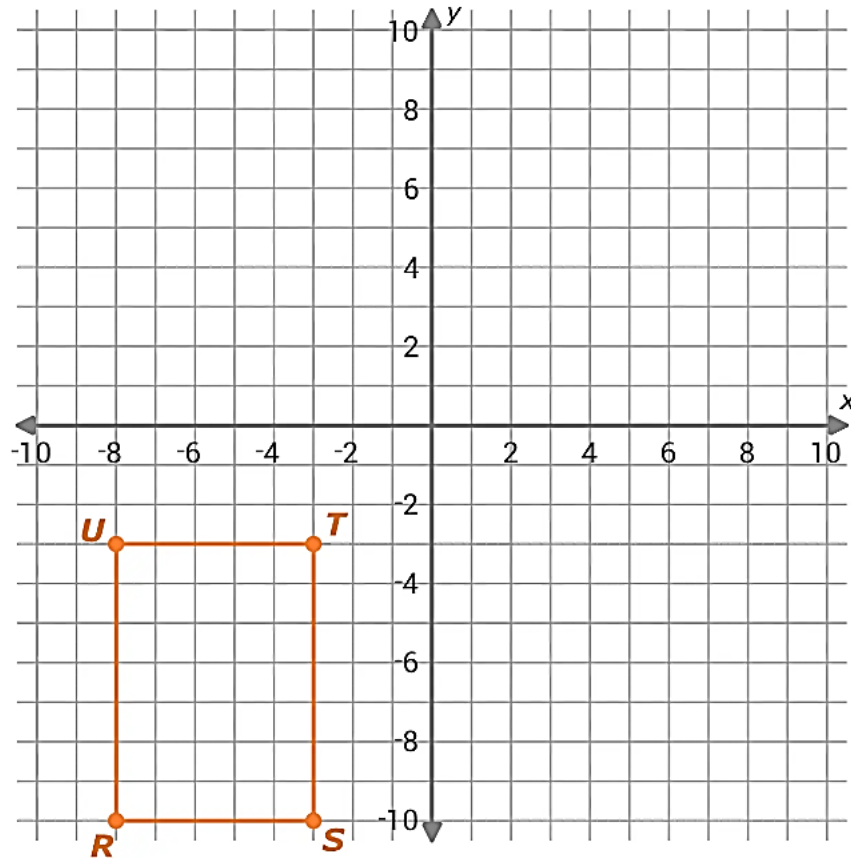
14. (i) Draw the image of $\triangle ABC$ after a reflection in the y -axis

(ii) What are the **coordinates of A' , B' and C'** ?

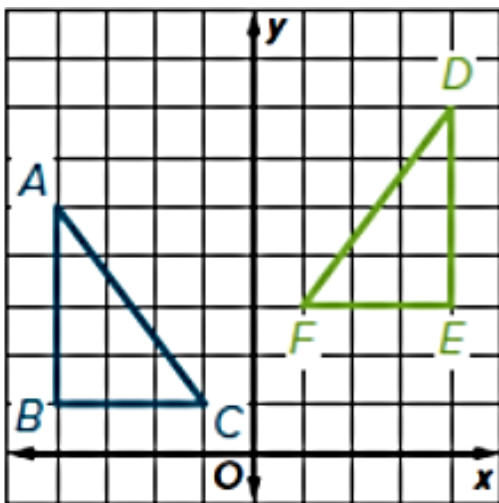


A'	
B'	
C'	

15. (a) Reflect quadrilateral QRST in the y-axis on the graph below.
 (b) What is the perimeter of the quadrilateral?



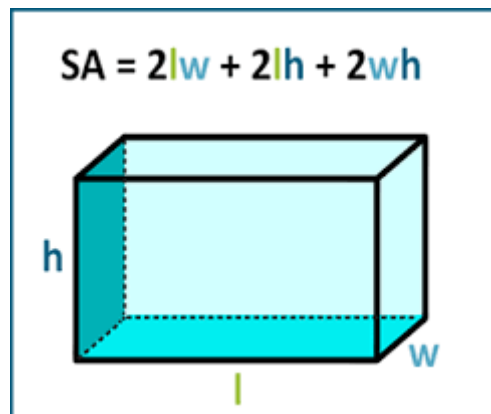
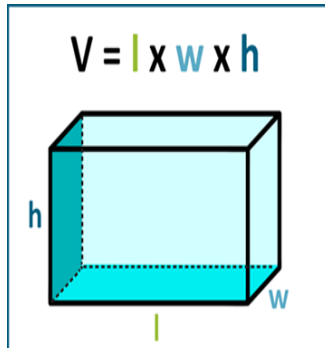
16. In the diagram, $\triangle DEF$ is called a glide reflection of $\triangle ABC$. Based on the diagram, define a glide reflection and explain your reasoning.



LESSON 11.5: THREE DIMENSIONAL FIGURES

KEY FACTS

RECTANGULAR PRISM



17. A cube is shown below.

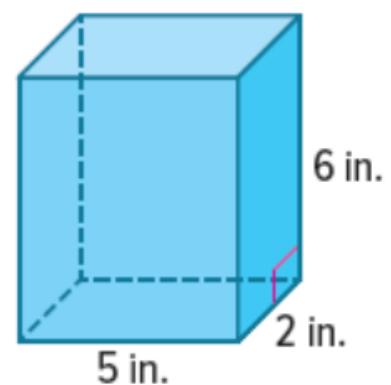
i) Calculate the volume



ii) Calculate the Total Surface Area

18. A Rectangular Prism is shown below.

(i) Calculate the Volume

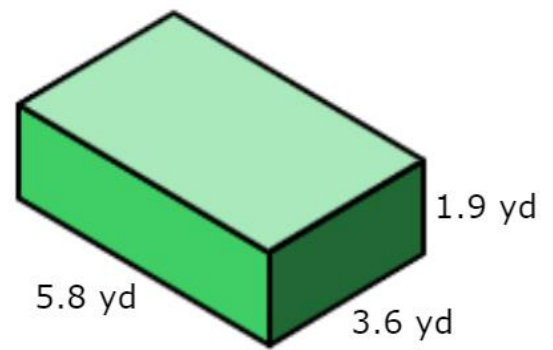


ii) Calculate the Total Surface Area

19. A Rectangular Prism is shown below.

(i) Calculate the Volume

ii) Calculate the Total Surface Area



LESSON 12.6: PROVING ANGLE RELATIONSHIPS

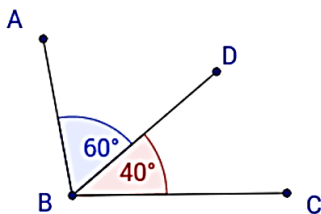
KEY CONCEPTS

Angle Addition Postulate

Adding the measures of 2 Adjacent Angles
Equals the measure of the Full/Total Angle

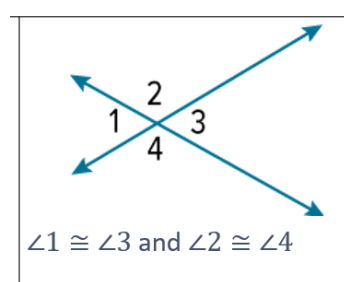
$$m\angle ABD + m\angle DBC = m\angle ABC$$

$$60^\circ + 40^\circ = 100^\circ$$



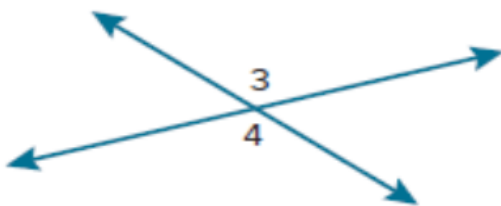
Theorem 3.8: Vertical Angles Theorem

If two angles are vertical angles, then
they are congruent.

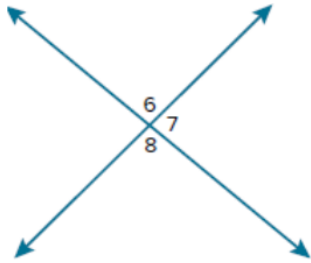


20. Find the measure of each numbered angle and name the angle relationship used to justify your work.

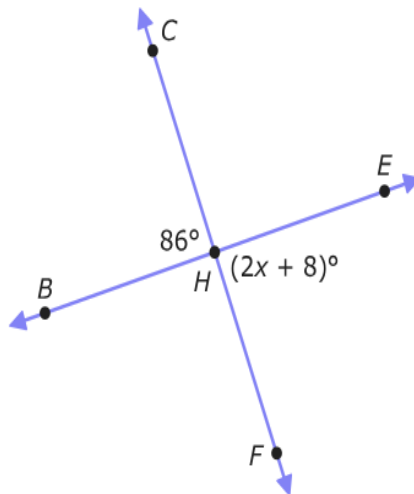
(i). $m\angle 3 = (2x + 23)^\circ$ and $m\angle 4 = (5x - 112)^\circ$



(ii) $m\angle 6 = (2x - 21)^\circ$ and $m\angle 7 = (3x - 34)^\circ$



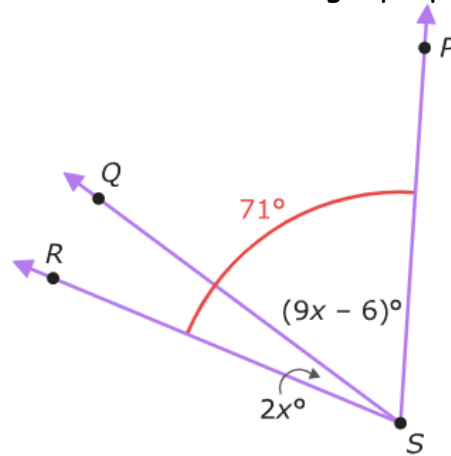
21. Find x in the given diagram below and state the angle property used. Then find the other missing angles. (Write your answer in the given table)



Calculation for x	Angle property
$x = \dots\dots\dots$ $\angle EHF = \dots\dots\dots$	

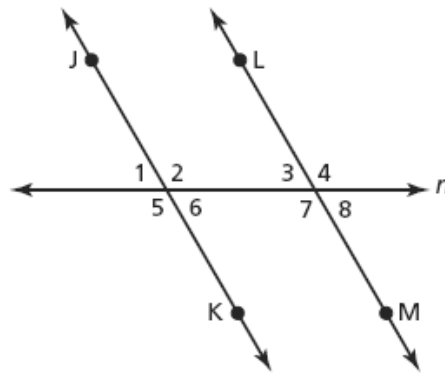
$\angle CHE =$	
$\angle BHF =$	

22. Find $\angle PSQ$ and $\angle QSR$ if $\angle PSR = 71^\circ$. Which angle property did you use to answer this question?



Calculation for angle x	Angle property
$x = \dots\dots\dots$	
$\angle PSQ =$	
$\angle QSR =$	

25. In the diagram below, JK is parallel to LM , and line n is a transversal.



[not drawn to scale]

Which two angles must be supplementary in the diagram?

- A. $\angle 1$ and $\angle 8$ C. $\angle 2$ and $\angle 7$
 B. $\angle 1$ and $\angle 6$ D. $\angle 7$ and $\angle 8$

26. What is the measure of $\angle IKL$ below? Which angle property did you use?

	$\angle IKL =$ _____ _____ Angle Property: _____
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Do your very best!