Name _____

Date _____ Period _____

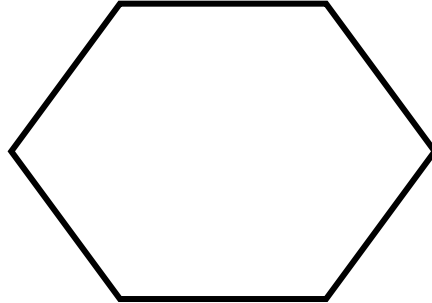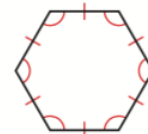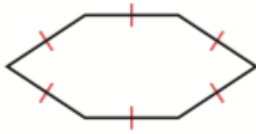## Chapter 7 Quadrilaterals and Other Polygons

Ch 7.1 Angles of Polygons

Polygon Characteristics

Types of Polygons

Angle Measures

Polygon Name	# of Sides	# of Triangles	Sum of interior angle measures
Triangle			
Quadrilateral			
Pentagon			
Hexagon			
n-gon			

Polygon Interior Angles Theorem	

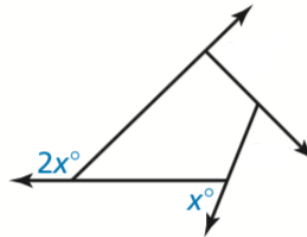$$m\angle 1 + m\angle 2 + ... + m\angle n =$$

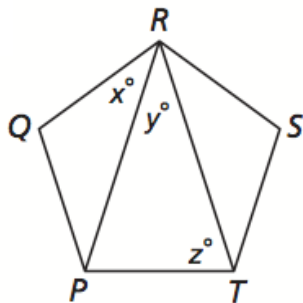| **Polygon Exterior Angles Theorem**	

$$m\angle 1 + m\angle 2 + ... + m\angle n =$$

Exercises:

The sum of the measures of the interior angles of a convex polygon is _____. Classify the polygon by the number of sides.
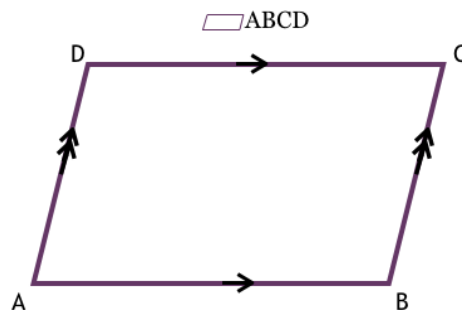
Solve for the value of x in the diagram.
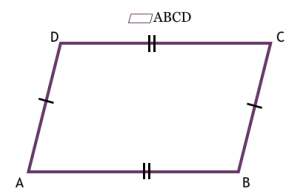
Given is a _____. Solve for x, y, and z.

7.2 Properties of Parallelograms

What is the definition of a parallelogram? _____

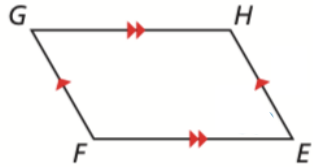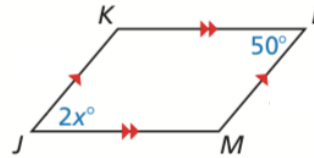_____

☐ABCD

Parallelogram Opposite Sides Theorem	

☐ABCD

◻ABCD

Parallelogram Opposite Angles Theorem	

Exercises

Find _____

Find the values of x and y.

Parallelogram Consecutive Angles Theorem	

Parallelogram Diagonals Theorem	
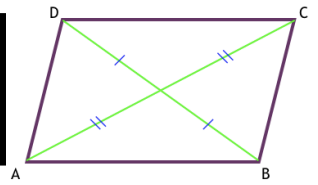
Exercises
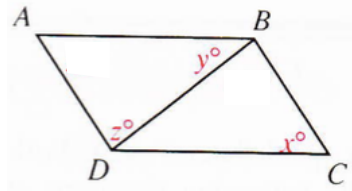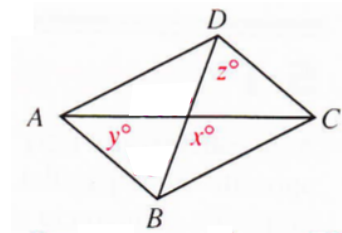
Find _____

Find _____

Proof

Given: _____
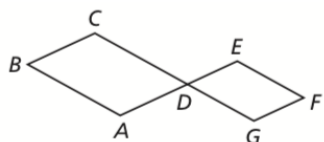
Prove: _____
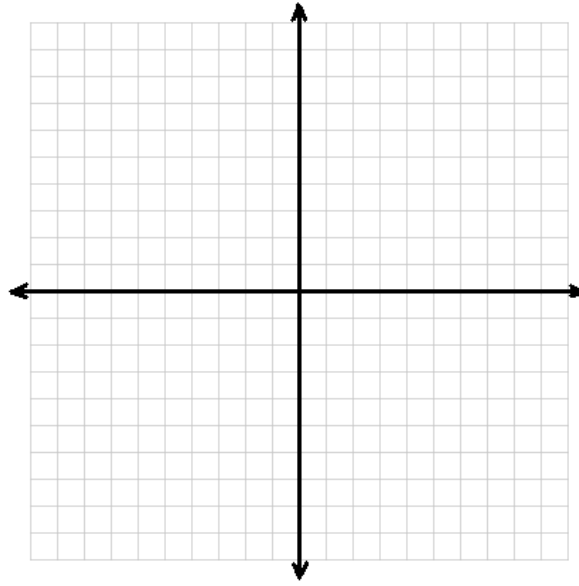

Statements   Reasons
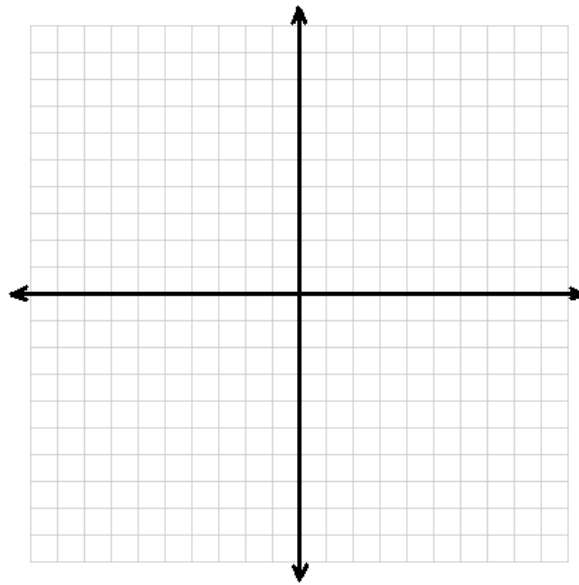
Find the coordinates of the intersection of the diagonals of ▱LMNO with vertices _____

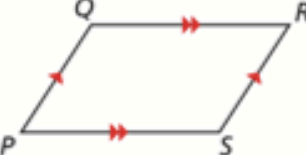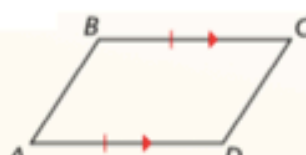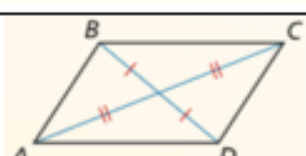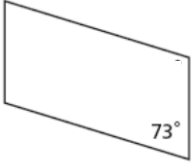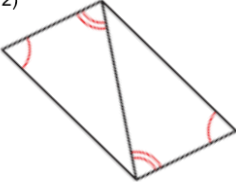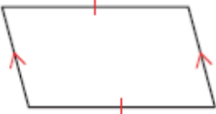Three vertices of ▱WXYZ are _____. Compute the coordinates of vertex Y.

7.3 Proving That a Quadrilateral Is a Parallelogram

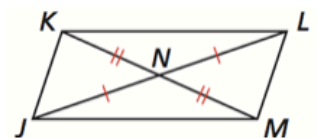How do we identify if a quadrilateral IS a parallelogram? Angles? Side lengths?

If-Diagram (If)	Hypothesis	Conclusion

Determine if quadrilateral is parallelogram

1)

73°

2)

3)

Proof:

Given: KM and JL bisect each other.
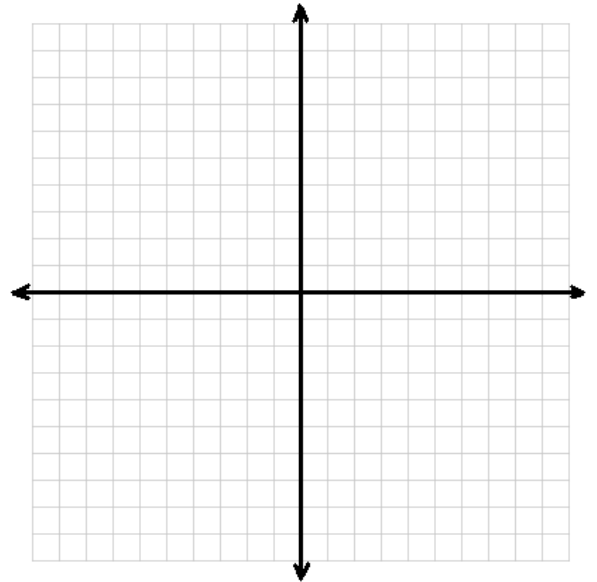**Prove**: JKLM is a parallelogram.

Statements	Reasons

Exercises

Determine if the following coordinates form a parallelogram
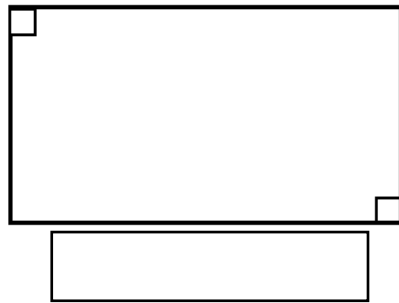
_____

Possible Approach #1:

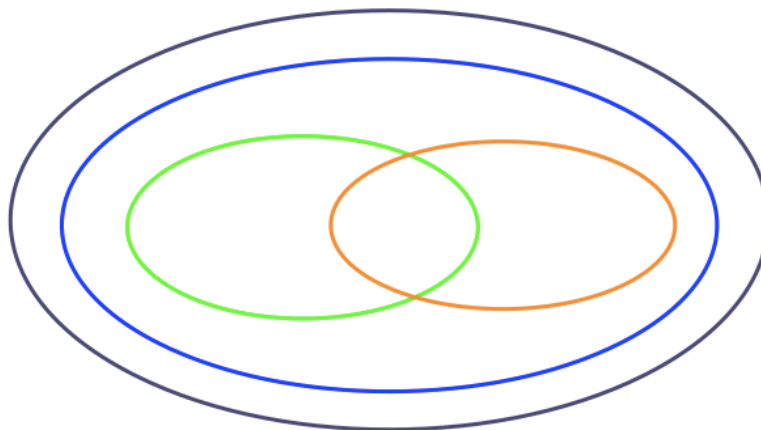| Possible Approach #2: |
| --- |
| |

7.4 Properties of Special Parallelograms

Special Parallelograms
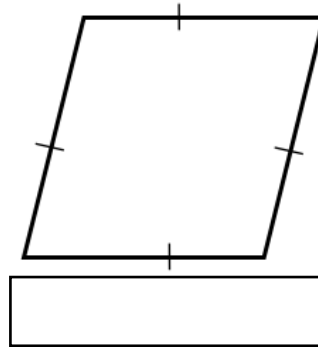
Create a Venn Diagram

Parallelograms   Rectangles   Rhombuses   Squares
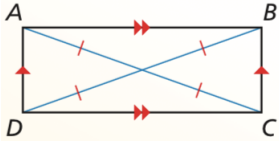
Rhombus Diagonals Theorem	
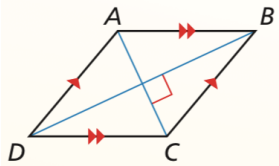
Rhombus Opposite Angles Theorem	
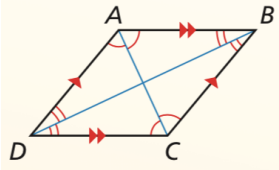
Rectangle Diagonals Theorem	

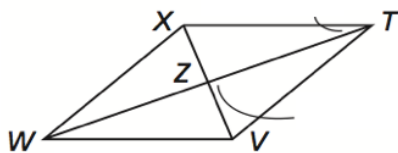**Problem:**

TVWX is a rhombus.
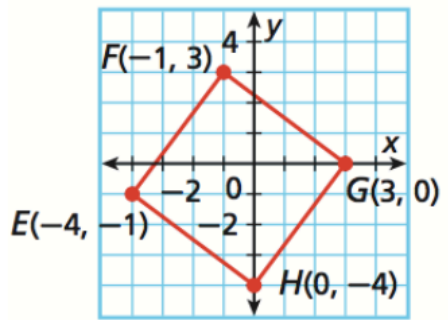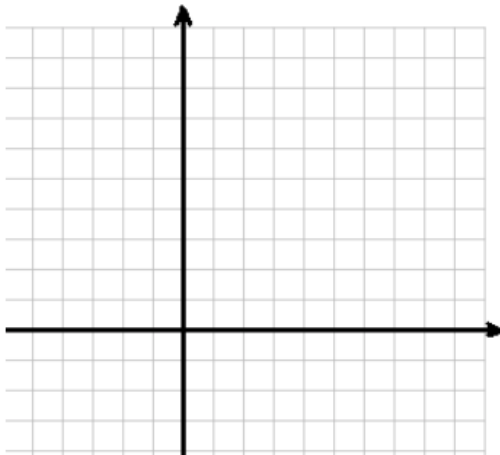
TV =

m∠VTZ =

Problem:

Show that _____

Problem:

Determine whether ▱ABCD

with vertices _____,

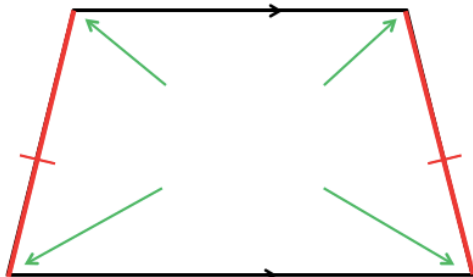_____, _____,

and _____ is a rectangle, a rhombus, or a square.

7

7.5 Properties of Trapezoids and Kites

Trapezoid
A quadrilateral with _____

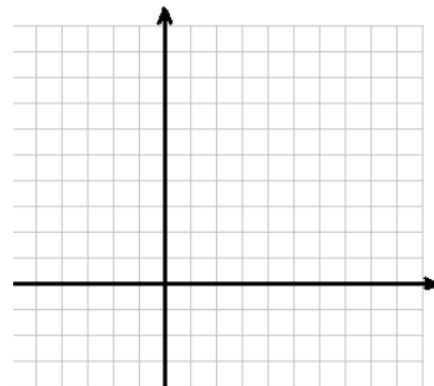**Isosceles Trapezoid**
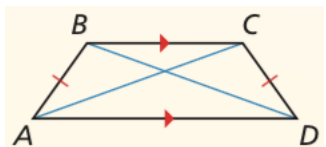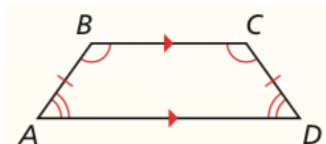A trapezoid with _____

Problem:
Determine if QRST is a trapezoid.
Q(_____), R(_____),

S(_____), T(_____)

Possible approaches:

Isosceles Trapezoid Base Angles Theorem	
Isosceles Trapezoid Base Angles Converse	
Isosceles Trapezoid Diagonals Theorem	

Midsegment of a Trapezoid: A segment that _____

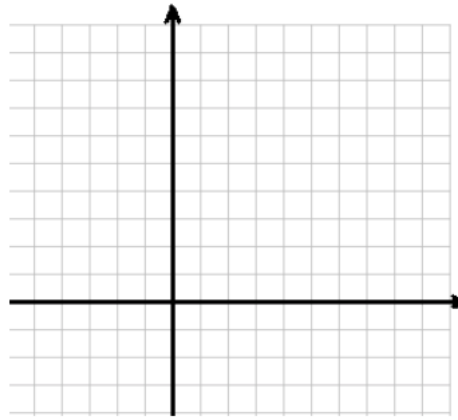| Trapezoid Midsegment Theorem	

$Midsegment =$
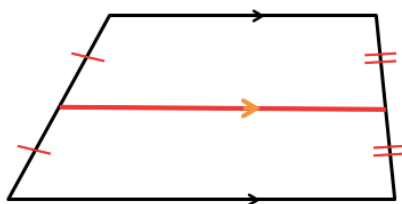
Problem:
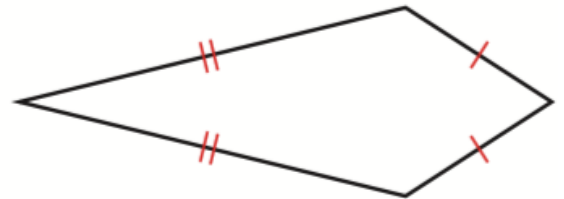
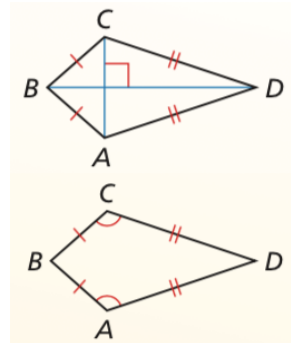Calculate the length of the midsegment of trapezoid STUV.

S(_____), T(_____),

U(_____), V(_____)

Kite - A quadrilateral that

_____

Kite Diagonals Theorem	
Kite Opposite Angles Theorem	

Problems:

1)

In kite PQRS,
m∠PQR = _____,
and m∠TRS = _____

Find each measure.
m∠QRT = _____
m∠QPS = _____
m∠PSR = _____

2)

Find m∠F = _____

3)

JN = _____ and NL = _____
Find KM = _____