<u>Content Objective</u>: I will be able to apply properties of parallelograms and rectangles to determine the measures of sides, diagonals, and/or angles.

TERM	DESCRIPTION	EXAMPLE
QUADRILATERAL	A closed figure formed by segments intersecting at their endpoints.	
PARALLELOGRAM	A quadrilateral in which opposite sides are	
RECTANGLE	A parallelogram with four angles.	
DIAGONAL	Segment joining vertices in a polygon	

EXAMPLE 1: Refer to the figure on the right to identify or name each of the following:

a.	The four vertices are	QR
b.	The name of the rectangle is	
C.	The opposite sides are	
d.	The opposite angles are	
e.	The consecutive angles are	
f.	The diagonals are	Ts

EXAMPLE 2:

- a. Name the diagonals of rectangle LMNO: _____ and _____
- b. Use the distance formula to find the lengths of these diagonals:



Label the figure to represent each of the properties listed below:

PROPERTIES OF RECTANGLES

- 1. Opposite sides are _____.
- 2. Opposite sides _____.
- 3. Opposite angles _____.
- 4. Consecutive angles _____.
- 5. Diagonals ______ each other.
- * 6. Four _____angles.
- *7. Diagonals are _____.



For Examples #3 - 5, set up and solve an equation to determine the value of **x**.

EXAMPLE 3: Quadrilateral **MNOP** is a rectangle. MO = 2x - 8 and NP = 23.



x = _____

QUICK CHECK: Quadrilateral **QRST** is a rectangle. **QS** = 3x - 2 and **RT** = 48 - 2x.



x = _____

EXAMPLE 4: Quadrilateral **ABCD** is a rectangle. AC = 4x - 13 and DP = x + 7.



X = _____

QUICK CHECK: Quadrilateral **RWST** is a rectangle. If RZ = 2x + 5 and TW = 5x - 20.



EXAMPLE 5: Quadrilateral **RSTU** is a rectangle. If $m \angle RSU = (3x - 5)^\circ$ and $m \angle UST = (4x + 4)^\circ$.



x = _____

QUICK CHECK: Quadrilateral **LMNO** is a rectangle. If \angle **LMN** = (11x + 35)°.



X = _____