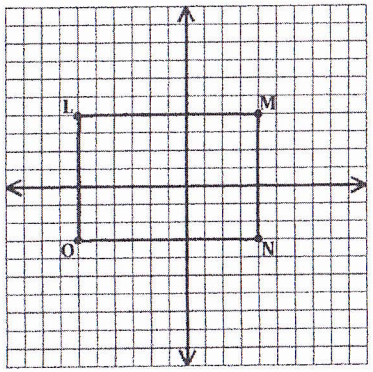
NOTES 7.4: RECTANGLES

Objective: _____

_____

RECTANGLE: A parallelogram with 4 right ∠s

Because a rectangle is a special type of parallelogram, it has all of the properties of a parallelogram. However, the diagonals of a rectangle have an additional special relationship.



Name the diagonals of rectangle LMNO:

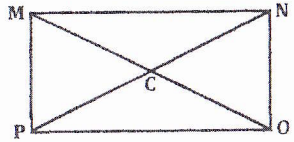
_____

Find the lengths of these diagonals:

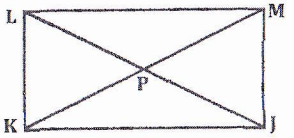
$\overline{OM}$: $\overline{LN}$:

Thus, we can say that if a parallelogram is a rectangle, then its diagonals are _____.

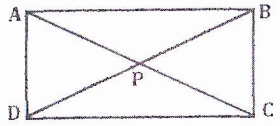
EXAMPLE 1: Quadrilateral MNOP is a rectangle. $MO = 2x - 8$ and $NP = 23$, find the value of 'x'.



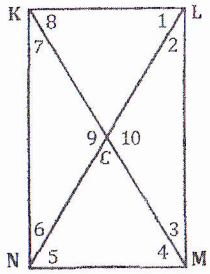
EXAMPLE 2: Quadrilateral JKLM is a rectangle. $LP = 3x + 7$ and $MK = 26$, find the value of 'x'.



EXAMPLE 3: Quadrilateral ABCD is a rectangle. $AC = 4x - 13$ and $DP = x + 7$. Find the value of 'x'.



EXAMPLE 4: Use the rectangle KLMN and the given information to find the following.



$m\angle 1 = 70°$

$m\angle 2 =$ _____

$m\angle 3 =$ _____

$m\angle 4 =$ _____

$m\angle 5 =$ _____

$m\angle 6 =$ _____

$m\angle 7 = 20°$

$m\angle 8 =$ _____

$m\angle 9 =$ _____

$m\angle 10 =$ _____

Let's summarize...
A rectangle has the five properties of a parallelogram and two additional properties. They are:

1) Opposite sides are ∥.
2) Opposite sides are ≅.
3) Opposite ∠s are ≅.
4) Consecutive ∠s are supplementary.
5) Diagonals bisect each other.
6) _____
7) _____