9.3 Homework - Properties of Rectangles, Rhombi & Squares
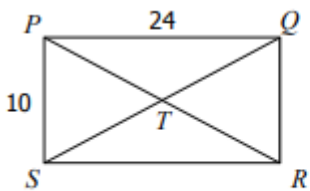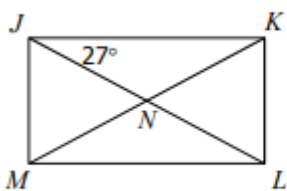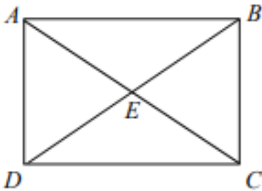
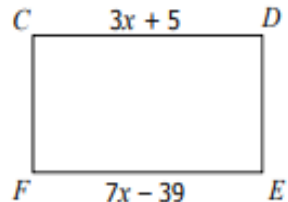| Name:	Class:

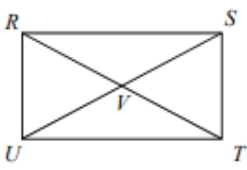| Topic:	Date:

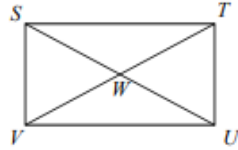| Main Ideas/Questions	Notes
PROPERTIES OF *Rectangles*	**Rectangles have the same properties of parallelograms:** • Opposite sides are congruent. • Opposite sides are parallel. • Opposite angles are congruent. • Consecutive angles are supplementary. • Diagonals bisect each other.
PLUS THESE! ▶	① ②

Directions: Each quadrilateral in questions 1-7 is a rectangle. Find the missing measures.

1)

$QR =$ _____
$SR =$ _____
$SQ =$ _____
$PR =$ _____
$QT =$ _____

2)

$m\angle MJK =$ _____
$m\angle MJL =$ _____
$m\angle JLK =$ _____
$m\angle KML =$ _____
$m\angle MNL =$ _____

3)
Given $DB = 42$, $AD = 26$, and $m\angle DAE = 52°$.

$AC =$ _____
$EB =$ _____
$BC =$ _____
$AB =$ _____
$m\angle ADC=$ _____
$m\angle ABD =$ _____
$m\angle BCA =$ _____
$m\angle DEC =$ _____

4) Find EF

C $3x + 5$ D

F $7x - 39$ E

5) If $RT = 5x - 14$ and $US = 2x + 10$, find VT.

6)	7)
If $VW = 9x - 11$ and $SU = 16x - 12$, find WT.	Find $m\angle XZW$.

6) If $VW = 9x - 11$ and $SU = 16x - 12$, find WT.

(diagram: rectangle with vertices S, T top, V, U bottom, diagonals meeting at W)

7) Find $m\angle XZW$.

(diagram: rectangle with vertices W, X top, Z, Y bottom, diagonals meeting at R; angle $(5x - 8)°$ at X, angle $(x + 20)°$ at Z)
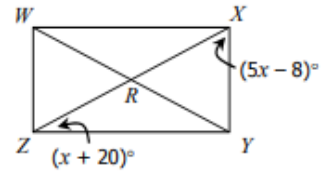
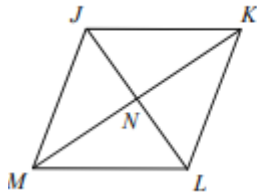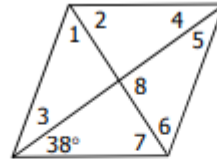| Main Ideas/Questions	Notes
PROPERTIES OF *Rhombi*	**Rhombi have the same properties of parallelograms:** • Opposite sides are congruent. • Opposite sides are parallel. • Opposite angles are congruent. • Consecutive angles are supplementary. • Diagonals bisect each other.
PLUS THESE! ▶ ①	
②	
③	

Directions: Each quadrilateral below is a rhombus. Find the missing measures.

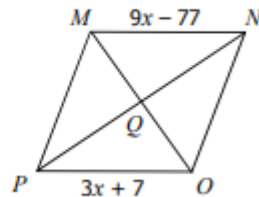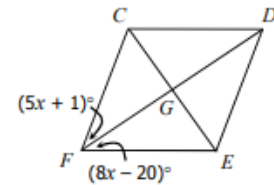| 8) JK = 12, JN = 7	9)
$JM =$ _____ $JL =$ _____ $MN =$ _____ $MK =$ _____	$m\angle 1 =$ _____ $m\angle 5 =$ _____ $m\angle 2 =$ _____ $m\angle 6 =$ _____ $m\angle 3 =$ _____ $m\angle 7 =$ _____ $m\angle 4 =$ _____ $m\angle 8 =$ _____

8) (diagram: rhombus JKLM with vertices J, K top, M, L bottom, diagonals meeting at N)

9) (diagram: rhombus with angles labeled 1, 2 top left/right, 4, 5, 8, 3, 38°, 7, 6)

10)	11)
If $MNOP$ is a rhombus, find MP.	If $CDEF$ is a rhombus, find $m\angle FED$.

10) If $MNOP$ is a rhombus, find MP.

(diagram: rhombus with vertices M, N top ($9x - 77$), P, O bottom ($3x + 7$), diagonals meeting at Q)

11) If $CDEF$ is a rhombus, find $m\angle FED$.

(diagram: rhombus with vertices C, D top, F, E bottom, diagonals meeting at G; angle $(5x + 1)°$ at C, angle $(8x - 20)°$ at F)

|	A square has ALL the properties of a parallelogram, rectangle, and rhombus!
PROPERTIES OF *Squares*	• Opposite sides are congruent. • Opposite sides are parallel. • Opposite angles are congruent. • Consecutive angles are supplementary. • Diagonals bisect each other. • Four right angles. • Diagonals are congruent. • Four congruent sides. • Diagonals are perpendicular. • Diagonals bisect opposite angles.

12)

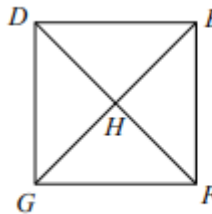If $ABCD$ is a square and $AD = 11$, find each missing value.
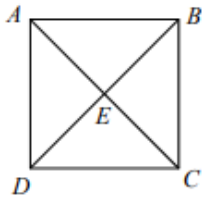
$BC =$ _____ $m\angle DAB =$ _____

$AC =$ _____ $m\angle AEB =$ _____

$BD =$ _____ $m\angle CBD =$ _____

$EC =$ _____ $m\angle BAC =$ _____

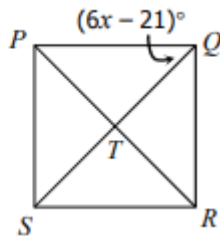**13)** STUV is a square.
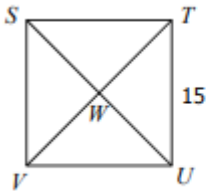
$VU =$ _____

$SU =$ _____

$TV =$ _____

$SW =$ _____

14) DEFG is a square.

$m\angle EFG =$ _____

$m\angle GDH =$ _____

$m\angle FEG =$ _____

$m\angle DHG =$ _____

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15) PQRS is a square.
Solve for x.

$(6x - 21)°$

16) Given square PQRS graphed on a coordinate plane, if Q is at (7,0) and R is at (5,-8), what is the length of SR (do on graph paper)?