

Name: \_\_\_\_\_ Date: \_\_\_\_\_ per: \_\_\_\_\_

Chapter 6 (section 4) – Day 4

Special Parallelograms

Homework: Worksheet

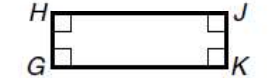
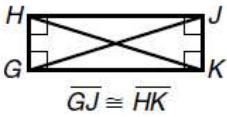
## Rectangles

Definition: A **rectangle** is a parallelogram with one right angle.



### Properties of a Rectangle

1. A rectangle has all the properties of a parallelogram.
2. A rectangle contains four right angles and is therefore equiangular.
3. The diagonals of a rectangle are congruent.

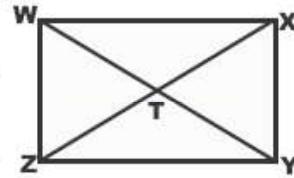
Properties of Rectangles	
 <p><math>GHJK</math> is a parallelogram.</p> <p>If a quadrilateral is a rectangle, then it is a parallelogram.</p>	 <p><math>\overline{GJ} \cong \overline{HK}</math></p> <p>If a parallelogram is a rectangle, then its diagonals are congruent.</p>

Since a rectangle is a parallelogram, a rectangle also has all the properties of parallelograms.

**PART 3. RECTANGLES**

Quadrilateral WXYZ is a rectangle. Use this rectangle for problems 20 – 22.

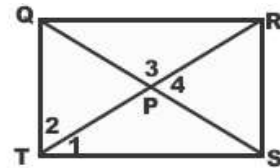
_____ 20.	If $WY = 19$ , then $ZX = ?$
_____ 21.	If $WY = 19$ , then $WT = ?$
_____ 22.	If $TX = 4.5$ , then $WY = ?$



_____ 23.	Rectangle GALS has diagonals $\overline{GL}$ and $\overline{AS}$ . If $GL = 3a + 6$ and $AS = 5a - 18$ , then $a = ?$
_____ 24.	Rectangle BOYS has diagonals $\overline{BY}$ and $\overline{OS}$ , which intersect at X. If $m\angle XOB = 70^\circ$ , then $m\angle YSO = ?$ and $m\angle BSO = ?$

Use rectangle QRST and the given information to solve problems 25 – 26.

_____ 25.	$QP = 6$ , find RT.
_____ 26.	$QT = 8$ , find RS.

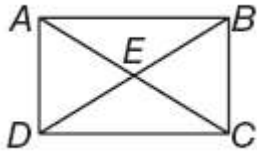


Solve each of the following.

_____ 27.	In rectangle RAIN below, $YR = 3x$ and $NY = 18$ , find 'x'.
_____ 28.	$m\angle 1 = 55^\circ$ , find the measures of $\angle 2$ , $\angle 3$ and $\angle 4$ .
_____ 29.	$m\angle 3 = 110^\circ$ , find the measures of $\angle 1$ , $\angle 2$ , and

## Practice Problems

a. If  $AE = 5$ ,  $BC = 6$ , and  $DC = 8$ , find  $AC$ ,  $BD$ ,  $AD$ , and  $AB$ .



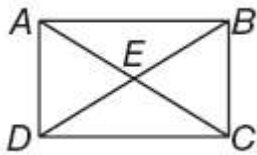
$AC = \underline{\hspace{2cm}}$

$BD = \underline{\hspace{2cm}}$

$AD = \underline{\hspace{2cm}}$

$AB = \underline{\hspace{2cm}}$

b. If  $BD = 3x - 7$  and  $CA = x + 5$ , find  $BD$ ,  $ED$ ,  $CA$ , and  $AE$ .



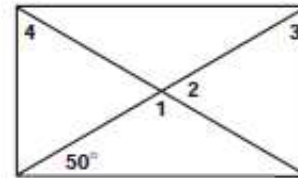
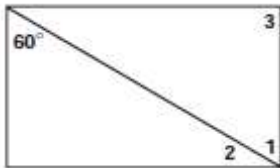
$BD = \underline{\hspace{2cm}}$

$ED = \underline{\hspace{2cm}}$

$CA = \underline{\hspace{2cm}}$

$AE = \underline{\hspace{2cm}}$

c. Find the measures of the numbered angles in each rectangle.



$m \angle 1 = \underline{\hspace{2cm}}^\circ$

$m \angle 2 = \underline{\hspace{2cm}}^\circ$

$m \angle 3 = \underline{\hspace{2cm}}^\circ$

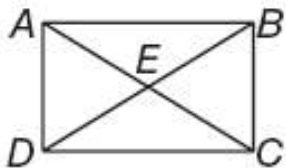
$m \angle 1 = \underline{\hspace{2cm}}^\circ$

$m \angle 2 = \underline{\hspace{2cm}}^\circ$

$m \angle 3 = \underline{\hspace{2cm}}^\circ$

$m \angle 4 = \underline{\hspace{2cm}}^\circ$

d. If  $m \angle DAC = 2x + 4$  and  $m \angle BAC = 3x + 1$ , find  $m \angle BAC$ .



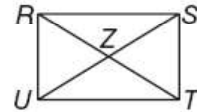
# Homework

NAME \_\_\_\_\_ DATE \_\_\_\_\_ PERIOD \_\_\_\_\_

## 6-4 Practice

### Rectangles

ALGEBRA Quadrilateral  $RSTU$  is a rectangle.



1. If  $UZ = x + 21$  and  $ZS = 3x - 15$ , find  $US$ .
2. If  $RZ = 3x + 8$  and  $ZS = 6x - 28$ , find  $UZ$ .
3. If  $RT = 5x + 8$  and  $RZ = 4x + 1$ , find  $ZT$ .
4. If  $m\angle SUT = 3x + 6$  and  $m\angle RUS = 5x - 4$ , find  $m\angle SUT$ .
5. If  $m\angle SRT = x + 9$  and  $m\angle UTR = 2x - 44$ , find  $m\angle UTR$ .
6. If  $m\angle RSU = x + 41$  and  $m\angle TUS = 3x + 9$ , find  $m\angle RSU$ .

Quadrilateral  $GHJK$  is a rectangle. Find each measure if  $m\angle 1 = 37$ .

- |                 |                 |
|-----------------|-----------------|
| 7. $m\angle 2$  | 8. $m\angle 3$  |
| 9. $m\angle 4$  | 10. $m\angle 5$ |
| 11. $m\angle 6$ | 12. $m\angle 7$ |

