

Name: _____ Date: _____ per: _____

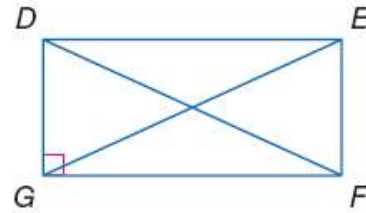
Chapter 6 (section 4) – Day 5

Special Parallelograms

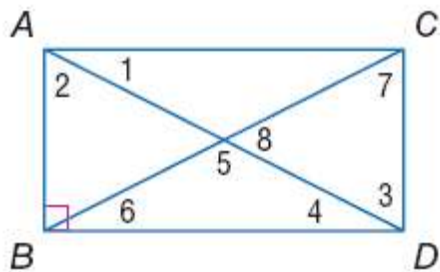
Homework: Worksheet

Warm - Up

1. Quadrilateral $DEFG$ is a rectangle.
If $FD = 3x - 7$ and $EG = x + 5$, find EG .



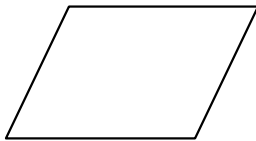
2. Quadrilateral $ABCD$ is a rectangle. Find each measure if $m\angle 2 = 40$.



$m\angle 1 = \underline{\hspace{1cm}}^\circ$	$m\angle 5 = \underline{\hspace{1cm}}^\circ$
$m\angle 2 = 40^\circ$	$m\angle 6 = \underline{\hspace{1cm}}^\circ$
$m\angle 3 = \underline{\hspace{1cm}}^\circ$	$m\angle 7 = \underline{\hspace{1cm}}^\circ$
$m\angle 4 = \underline{\hspace{1cm}}^\circ$	$m\angle 8 = \underline{\hspace{1cm}}^\circ$

Rhombus

Definition: A **rhombus** is a parallelogram with 2 congruent consecutive sides.



Properties of a Rhombus

1. A rhombus has all the properties of a parallelogram.
2. A rhombus is equilateral.
3. The diagonals of a rhombus are perpendicular to each other.
4. The diagonals of a rhombus bisect its angles.

Square

Definition: A **square** is a rectangle with 2 congruent consecutive sides.

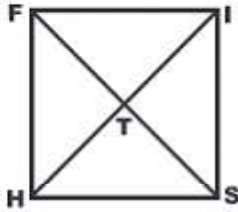


Properties of a Square

1. A square has all the properties of a rectangle.
2. A square has all the properties of a rhombus.

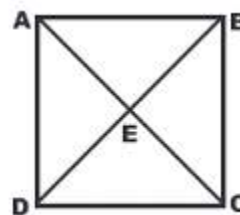
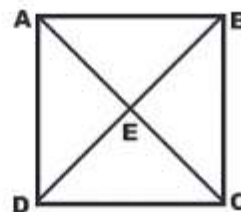
PART 4. SQUARES & RHOMBI

Find the indicated measure.

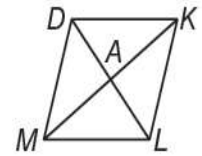
<p>_____ 30.</p>	<p>FISH is a square with $IT = 6$. Find IH and IS.</p>	
<p>_____ 31.</p>	<p>If MNOP is a square, what is $m\angle MNP$?</p>	

Use square ABCD and the given information to find each value.

<p>_____ 32.</p>	<p>If $m\angle AEB = (3x)^\circ$, find 'x'.</p>
<p>_____ 33.</p>	<p>If $m\angle BAC = (9x)^\circ$, find 'x'.</p>
<p>_____ 34.</p>	<p>If $AB = 2x + 4$ and $CD = 3x - 5$, find BC. Find BC and BD.</p>
<p>_____ a.</p>	<p>The perimeter of the square is 32 cm. Find the length of diagonal DB.</p>
<p>_____ b.</p>	<p>$DE = 10$, find AD.</p>
<p>_____ c.</p>	<p>The area of the square is 16. Find EC.</p>



Find the indicated value.



_____ 35.	ACKJ is a rhombus. $AC = 6y + 4$, $CK = 5y + 8$, and $KJ = 3y + 16$. Find the value of 'y'.
-----------	--

_____ a.	<p>Quadrilateral <i>DKLM</i> is a rhombus.</p> <p>If $DK = 8$, find KL.</p>
----------	---

_____ b.	<p>Quadrilateral <i>DKLM</i> is a rhombus.</p> <p>If $DA = 4x$ and $AL = 5x - 3$, find DL.</p>
----------	---

_____ c.	The diagonals of a Rhombus are 10, and 24 cm. Find the length of the side of the rhombus.
----------	---

$m\angle 1 = \underline{\hspace{1cm}}^\circ$ $m\angle 2 = \underline{\hspace{1cm}}^\circ$ $m\angle 3 = \underline{\hspace{1cm}}^\circ$ $m\angle 4 = \underline{\hspace{1cm}}^\circ$	<p>Find the measures of the numbered angles in each rhombus.</p>
--	--

$m\angle 1 = \underline{\hspace{1cm}}^\circ$ $m\angle 2 = \underline{\hspace{1cm}}^\circ$ $m\angle 3 = \underline{\hspace{1cm}}^\circ$ $m\angle 4 = \underline{\hspace{1cm}}^\circ$	<p>Find the measures of the numbered angles in each rhombus.</p>
--	--

Homework

Properties of the Rectangle, Rhombus, and Square

Rectangle

all properties of parallelograms
plus
—all diagonals are congruent
—all angles measure 90°

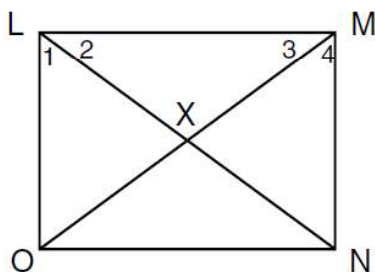
Rhombus

all properties of parallelograms
plus
—all sides are congruent
—all diagonals are perpendicular
—all diagonals bisect opposite angles

Square

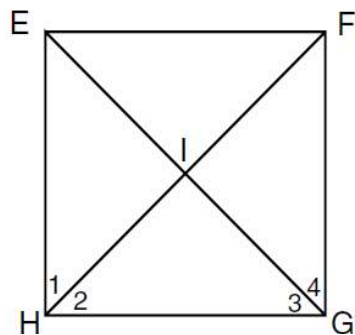
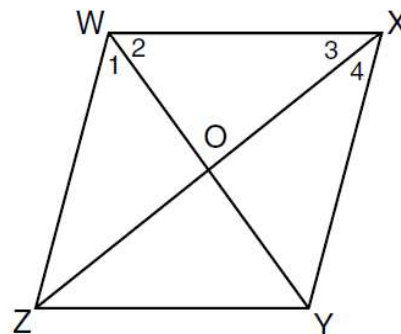
all properties of
—parallelogram
—rectangle
—rhombus

Use the properties to solve for the missing measures in the diagrams.



1. LMNO is a rectangle. If $LM = 16$, $MN = 12$, and $\angle 1 = 60^\circ$, find the following:
- | | | |
|-----------------|-------------------------|-----------------------|
| a. $ON =$ _____ | d. $LX =$ _____ | g. $OX =$ _____ |
| b. $OL =$ _____ | e. $\angle LON =$ _____ | h. $\angle 3 =$ _____ |
| c. $LN =$ _____ | f. $\angle 2 =$ _____ | i. $\angle 4 =$ _____ |

2. WXYZ is a rhombus. If $WX = 4$ and $\angle WXY = 60^\circ$, find the following:
- | | | |
|-------------------------|-----------------------|-----------------|
| a. $XY =$ _____ | d. $\angle 2 =$ _____ | g. $WO =$ _____ |
| b. $\angle ZWX =$ _____ | e. $\angle 3 =$ _____ | h. $OX =$ _____ |
| c. $\angle 1 =$ _____ | f. $\angle 4 =$ _____ | i. $WY =$ _____ |



3. EFGH is a square. If $EF = 10$, find the following:
- | | | |
|-------------------------|-------------------------|-----------------------|
| a. $FG =$ _____ | d. $EI =$ _____ | g. $\angle 1 =$ _____ |
| b. $\angle EFG =$ _____ | e. $IF =$ _____ | h. $\angle 3 =$ _____ |
| c. $EG =$ _____ | f. $\angle EIF =$ _____ | i. $HF =$ _____ |