Review for Mastery
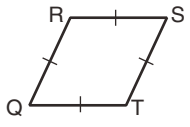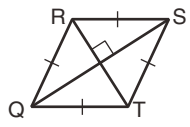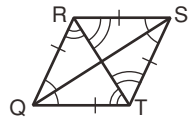
LESSON 6-4 *Properties of Special Parallelograms*

A **rectangle** is a quadrilateral with four right angles. A rectangle has the following properties.

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

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

A **rhombus** is a quadrilateral with four congruent sides. A rhombus has the following properties.

Properties of Rhombuses		
QRST is a parallelogram.	$\overline{QS} \perp \overline{RT}$	$\angle RQS \cong \angle SQT$
If a quadrilateral is a rhombus, then it is a parallelogram.	If a parallelogram is a rhombus, then its diagonals are perpendicular.	If a parallelogram is a rhombus, then each diagonal bisects a pair of opposite angles.

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

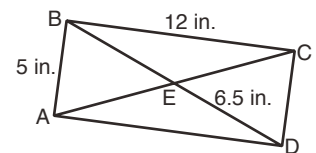***ABCD* is a rectangle. Find each length.**

1. *BD*

_____

2. *CD*

_____

3. *AC*

_____

4. *AE*

_____

***KLMN* is a rhombus. Find each measure.**

5. *KL*

_____

6. m∠*MNK*

_____

Holt Geometry
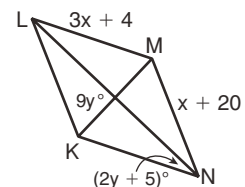
LESSON

Practice B

6-4 *Properties of Special Parallelograms*

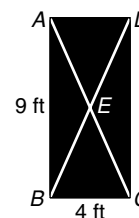**Tell whether each figure must be a rectangle, rhombus, or square based on the information given. Use the most specific name possible.**

1.

2.

3.

_____   _____   _____
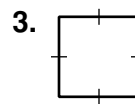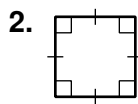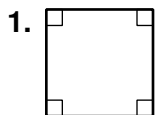
A modern artist's sculpture has rectangular faces. The face shown here is 9 feet long and 4 feet wide. Find each measure in simplest radical form. (*Hint:* Use the Pythagorean Theorem.)

4. $DC =$ _____

5. $AD =$ _____
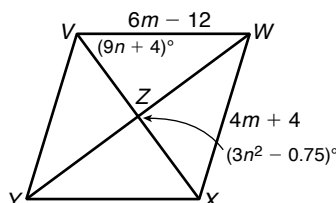
6. $DB =$
_____

7. $AE =$
_____

***VWXY* is a rhombus. Find each measure.**

8. $XY =$ _____

9. $m\angle YVW =$ _____

10. $m\angle VYX =$ _____

11. $m\angle XYZ =$ _____

12. The vertices of square *JKLM* are $J(-2, 4)$, $K(-3, -1)$, $L(2, -2)$, and $M(3, 3)$. Find each of the following to show that the diagonals of square *JKLM* are congruent perpendicular bisectors of each other.

$JL =$ _____

$KM =$ _____

slope of $\overline{JL} =$

_____

slope of $\overline{KM} =$

_____

midpoint of $\overline{JL} =$ (_____, _____)

midpoint of $\overline{KM} =$ (_____, _____)

Write a paragraph proof.

13. Given: *ABCD* is a rectangle.
Prove: $\angle EDC \cong \angle ECD$