

RHOMBUS NOTES

- Rhombuses, rectangles, and squares are special types of parallelograms.
 - Therefore, they exhibit all the properties of parallelograms have, and more.
 - And the properties of quadrilaterals, too!

Rhombus Corollary

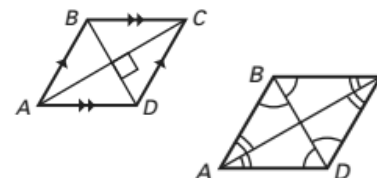
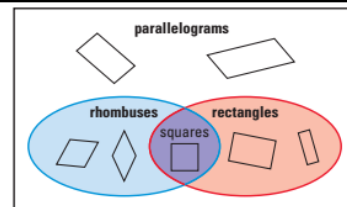
- A quadrilateral is a *rhombus* **if and only if** it has four congruent sides.

Rhombus Diagonals Theorem

- A parallelogram is a *rhombus* **if and only if** its diagonals are perpendicular.

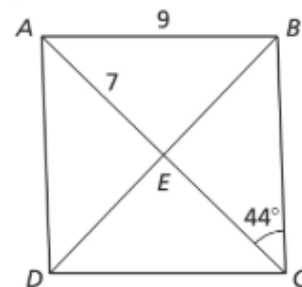
Rhombus Opposite Angles Theorem

- A parallelogram is a *rhombus* **if and only if** each diagonal bisects opposite angles.



EXAMPLE 1 – Find the indicated value in the given **rhombus**.

1. BC	2. AC	3. $m\angle ACD$	4. $m\angle AED$
5. $m\angle ADC$	6. BE		



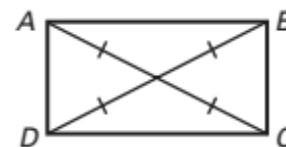
RECTANGLE NOTES

Rectangle Corollary

- A quadrilateral is a *rectangle* **if and only if** it has four right angles.

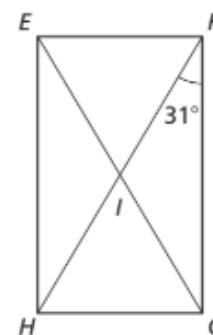
Rectangle Diagonals Theorem

- A parallelogram is a *rectangle* **if and only if** its diagonals are all congruent.



EXAMPLE 2 – Find the indicated value in the **rectangle**. Given that $m\angle HFG = 31^\circ$ and $EG = 17$.

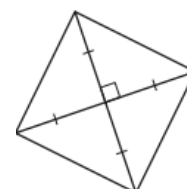
1. $m\angle FHE$	2. $m\angle FHG$	3. HF
4. EI	5. FI	6. $m\angle FIG$



SQUARE NOTES

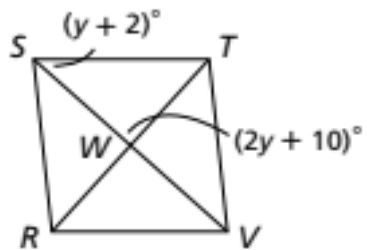
Square Corollary

- A quadrilateral is a *square* **if and only if** it is a rhombus and a rectangle.
 - That means it must have **all** properties of *rhombuses* and *rectangles* **both**.

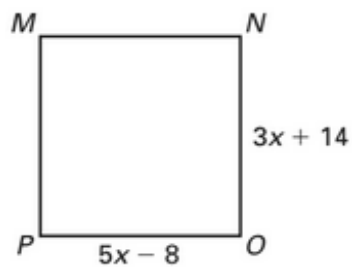


EXAMPLE 3 – Find the measure of the indicated variable in the specified parallelogram.

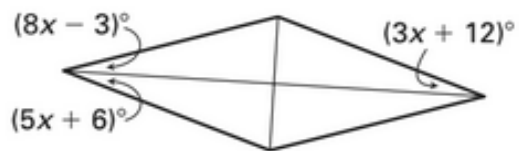
1. $RSTV$ is a rhombus.



2. $MNOP$ is a square.



3. $ABCD$ is a rhombus.



4. $LMNO$ is a rectangle.

