PHOMBUS NOTES

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

Rhombus Corollary

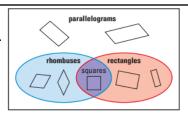
A quadrilateral is a rhombus if and only if it has four congruent sides.

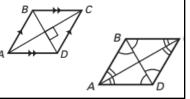
Rhombus Diagonals Theorem

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

Rhombus Opposite Angles Theorem

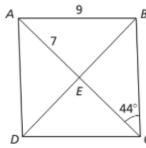
A parallelogram is a *rhombus* **if and only if** each diagonal bisects opposite angles.





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

1. BC	2. <i>AC</i>	3. <i>m∠ACD</i>	4. m∠AED	A 9
5. m∠ADC		6. <i>BE</i>		D E



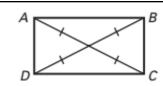
RECTANGLE NOTES

Rectangle Corollary

• A quadrilateral is a *rectangle* **if and only if** it has <u>four right angles</u>.

Rectangle Diagonals Theorem

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



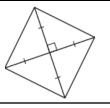
EXAMPLE 2 – Find the indicated value in the **rectangle**. Given that $m \angle HFG = 31^{\circ}$ and EG = 17.

1. m∠FHE	2. m∠FHG	3. <i>HF</i>	31°
4. EI	5. FI	6. m∠FIG	H G

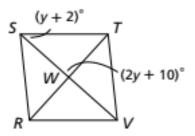
SQUARE NOTES

Square Corollary

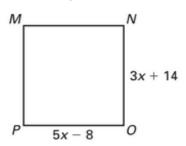
- A quadrilateral is a *square* **if and only if** it is a rhombus and a rectangle.
 - O That means it must have **all** properties of *rhombuses* and *rectangles* **both**.



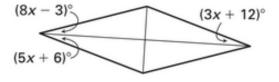
1. RSTV is a rhombus.



2. MNOP is a square.



3. *ABCD* is a rhombus.



4. *LMNO* is a rectangle.

