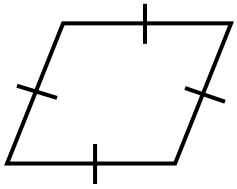
Geometry Note-Taking Guide **Name:_____**

Period:____

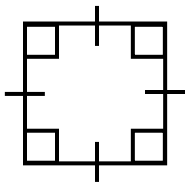
Section 8.3 – Rhombuses, Rectangles, and Squares

There are ___ special types of parallelograms.

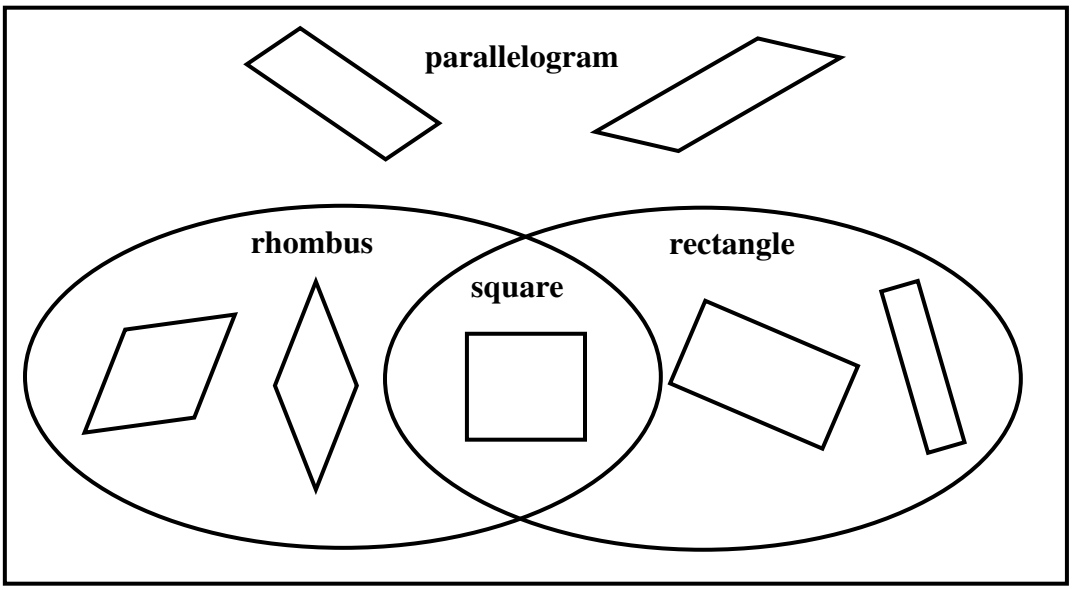


A _____
is a **parallelogram** with
four congruent sides.

A _____
is a **parallelogram** with
four right angles.



A _____
is a **parallelogram** with
four congruent sides and
four right angles.

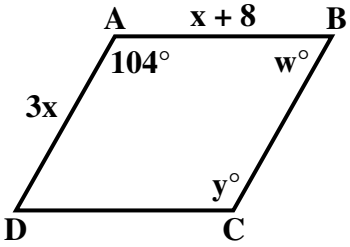


Note: Label the diagram

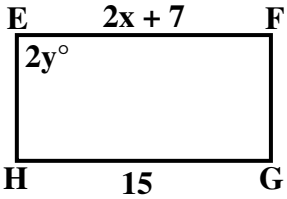
Note: All of the shapes are 4-sided figures, _____.

Ex 1:
Find the value of the variable(s) for the indicated parallelogram.

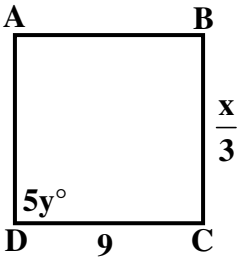
a) Rhombus ABCD



b) Rectangle EFGH



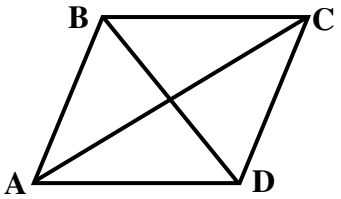
c) Square ABCD



Properties of a Rhombus **Note:** Label diagrams.

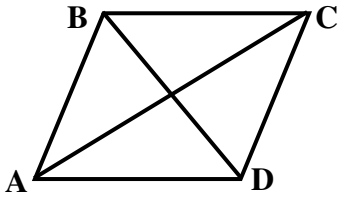
A parallelogram is a rhombus if and only if its diagonals are perpendicular.

ABCD is a rhombus if and only if $\overline{AC} \perp \overline{BD}$.



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

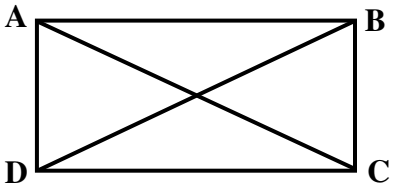
ABCD is a rhombus if and only if
$\overline{AC}$ bisects $\angle DAB$ and $\angle BCD$ and
$\overline{BD}$ bisects $\angle ADC$ and $\angle CBA$.



Properties of a Rectangle

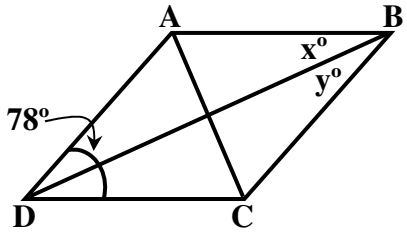
A parallelogram is a rectangle if and only if its diagonals are congruent.

ABCD is a rectangle if and only if $\overline{AC} \cong \overline{BD}$.

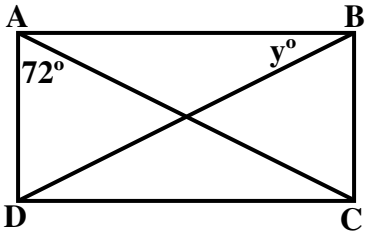


Ex 2:
Find the value of the variable(s).

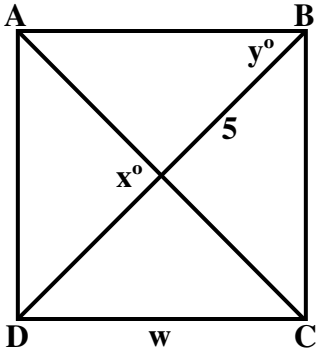
a) ABCD is a rhombus.



b) ABCD is a rectangle.
$AC = 8x - 13, BD = 7x + 11$



c) ABCD is a square.



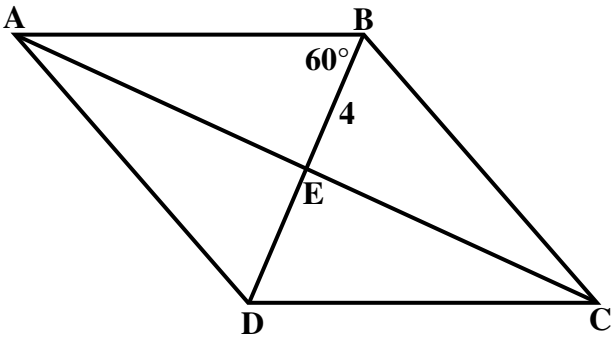
Ex 3:
Find the indicated measures for rhombus ABCD.

a) $m\angle AEB =$

b) $m\angle BAE =$

c) $m\angle DAE =$

d) AE =

e) AB =

f) BC =