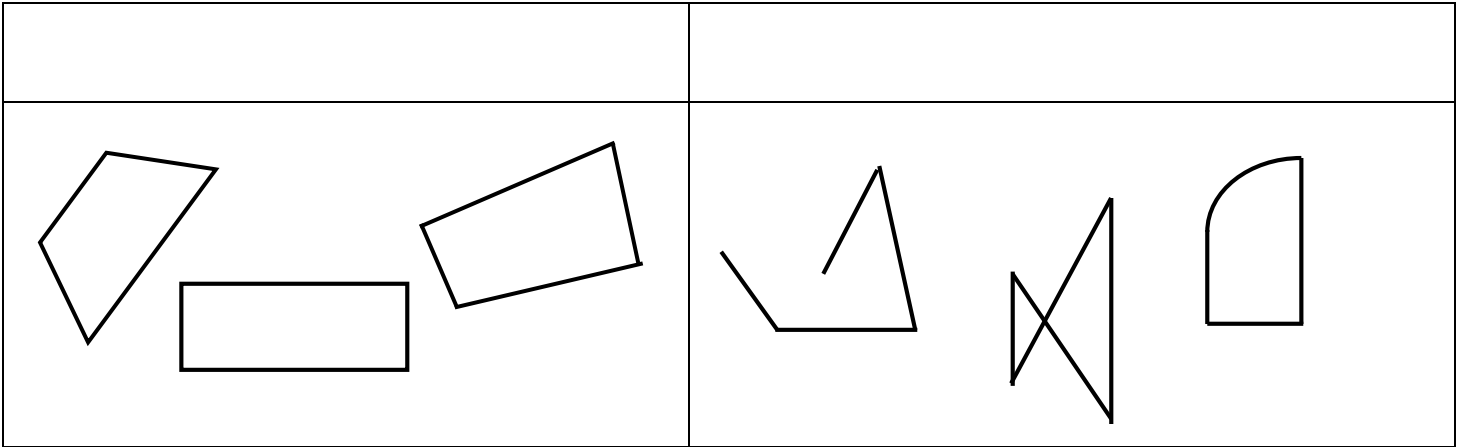


NOTES 7.2 & 7.3: PARALLELOGRAMS

Objective: _____

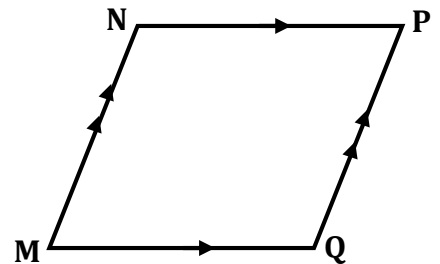
QUADRILATERALS:



PARALLELOGRAM:

EXAMPLE 1:

a) The parallelogram at the right has four vertices. They are:



b) It would be NAMED: _____

c) The OPPOSITE SIDES of \square MNPQ are: _____

d) The OPPOSITE ANGLES of \square MNPQ are: _____

e) The CONSECUTIVE ANGLES of \square MNPQ are: _____

Using \square MNPQ, what conjectures can you make about the following:

a) OPPOSITE SIDES

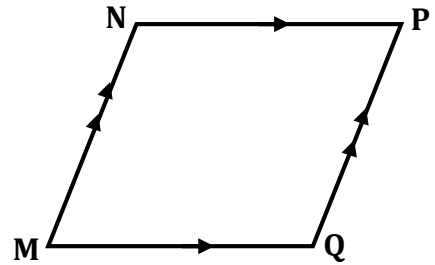
- _____
- _____

b) OPPOSITE ANGLES

- _____

c) CONSECUTIVE ANGLES

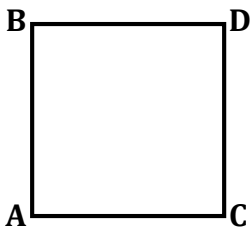
- _____



When polygons have more than three sides, they have diagonals.

DIAGONALS:

EXAMPLE 2: Name the following.

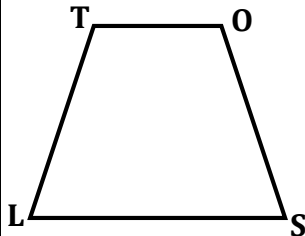


Vertices:

Name:

Opposite Vertices:

Diagonals:

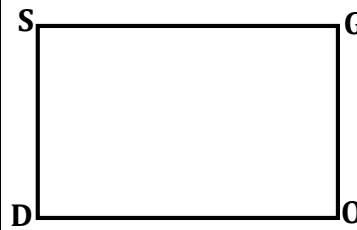


Vertices:

Name:

Opposite Vertices:

Diagonals:

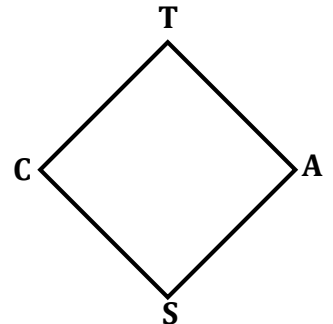


Vertices:

Name:

Opposite Vertices:

Diagonals:



Vertices:

Name:

Opposite Vertices:

Diagonals:

Notes 7.2 & 7.3 (Continued)

BISECT:

Diagonals of a parallelogram ***bisect each other***.

Thus, parallelograms have five properties. They are:

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____

EXAMPLE 3:

Complete each statement regarding the parallelogram below.

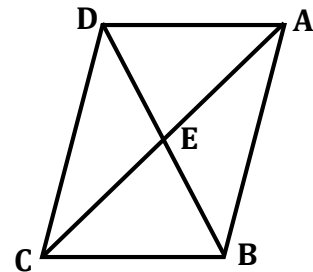
a) Name the parallelogram: _____

b) $\overline{AB} \parallel$ _____

c) $\overline{DA} \cong$ _____

d) $\angle CDA \cong$ _____

e) $\overline{DE} \cong$ _____



EXAMPLE 4:

If ABCD is a parallelogram, $m\angle A = x^\circ$, and $m\angle D = (2x - 3)^\circ$, find the value of 'x'.

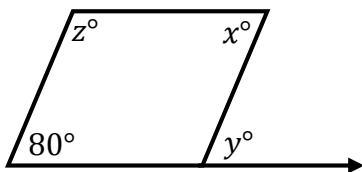
EXAMPLE 5:

$XYZW$ is a parallelogram with diagonals \overline{XZ} and \overline{YW} that intersect at point A . If $XA = 3m$, $ZA = 5m - 4$, and $YW = 10m$, find 'm'.

EXAMPLES:

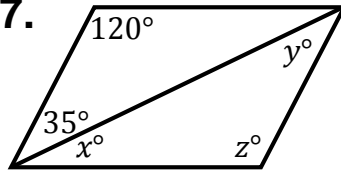
For each parallelogram, find the values of 'x', 'y', and 'z'.

6.



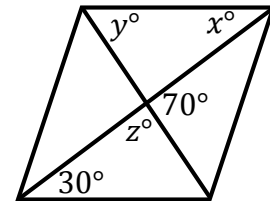
$x = \underline{\hspace{2cm}}$; $y = \underline{\hspace{2cm}}$;
 $z = \underline{\hspace{2cm}}$

7.



$x = \underline{\hspace{2cm}}$; $y = \underline{\hspace{2cm}}$;
 $z = \underline{\hspace{2cm}}$

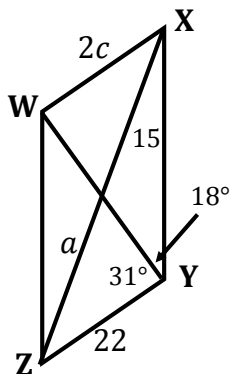
8.



$x = \underline{\hspace{2cm}}$; $y = \underline{\hspace{2cm}}$;
 $z = \underline{\hspace{2cm}}$

EXAMPLE 9:

$WXYZ$ is a parallelogram. $m\angle ZWX = b^\circ$ and $m\angle WXY = d^\circ$. Find the values of 'a', 'b', 'c', and 'd'.



$a = \underline{\hspace{2cm}}$

$b = \underline{\hspace{2cm}}$

$c = \underline{\hspace{2cm}}$

$d = \underline{\hspace{2cm}}$