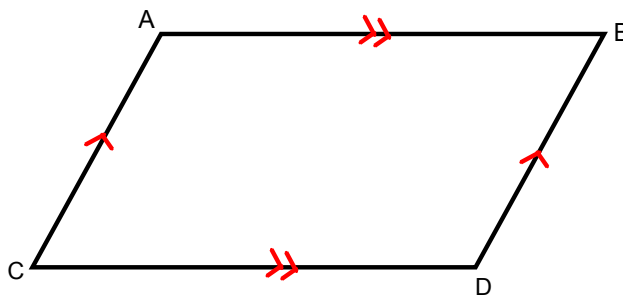


## 8-2 Parallelograms

### Parallelograms:


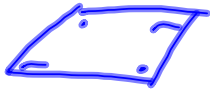
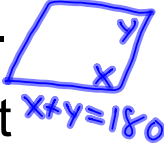
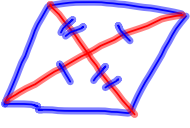

\*A quadrilateral with both pair of opposite sides parallel.

\*Symbol:  ABCD

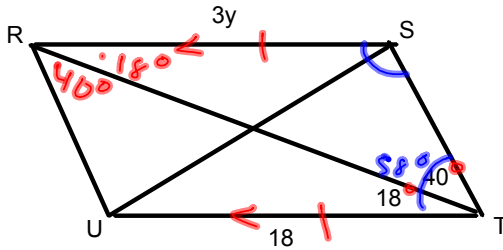


### 8-2 Parallelograms

#### Properties of Parallelograms:

- Opposite sides are congruent. 
- Opposite angles are congruent. 
- Consecutive angles are supplementary. 
- If a parallelogram has one right angle, it has FOUR right angles.
- Diagonals bisect each other. 
- Each diagonal of a parallelogram separates the parallelogram into 2 congruent triangles. 

- 1.) RSTU is a parallelogram. Find measure of angle URT, measure of angle RST, and the value for y.



$m\angle URT = 40^\circ$   
alt. int. angles

$m\angle RST = 122^\circ$   

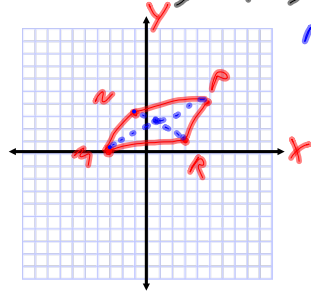
$$\begin{array}{r} 40 \\ + 18 \\ \hline 58 \end{array}$$

$$\begin{array}{r} 180 \\ - 58 \\ \hline \end{array}$$

$$\frac{3y}{3} = \frac{18}{3}$$
  

$$y = 6$$

- 2.) What are the coordinates of the intersection of the diagonals of parallelogram MNPR, with vertices  $M(-3, 0)$ ,  $N(-1, 3)$ ,  $P(5, 4)$ ,  $R(3, 1)$ ?



midpt. of  $\overline{MP}$   

$$\left( \frac{-3+5}{2}, \frac{0+4}{2} \right)$$
  

$$\left( \frac{2}{2}, \frac{4}{2} \right)$$
  

$$(1, 2)$$