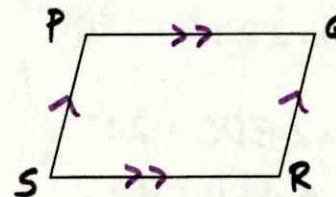
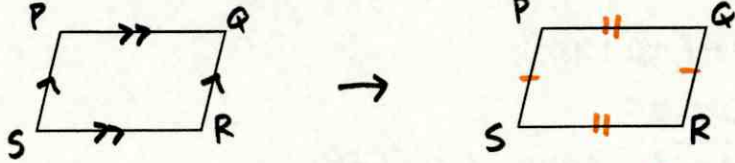

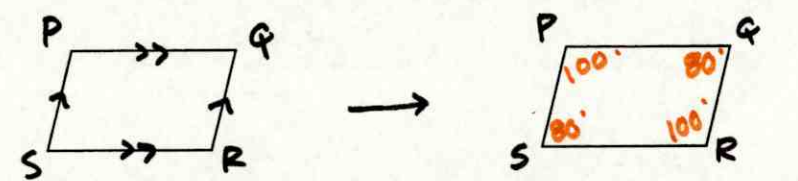
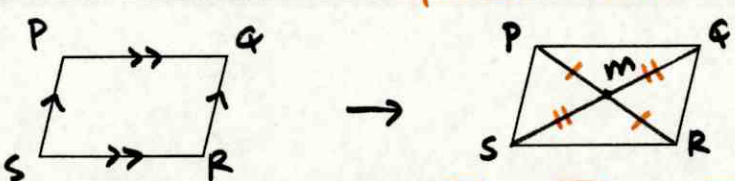
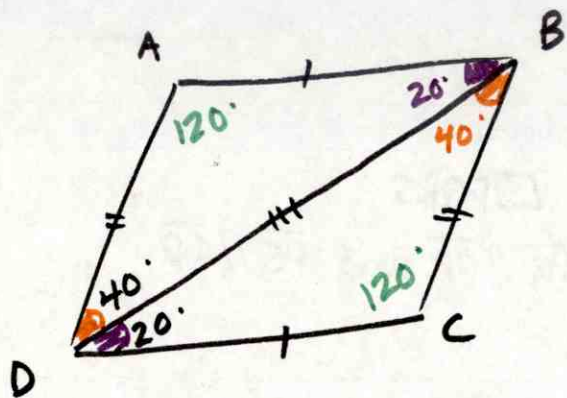


Use Properties of Parallelograms

Vocabulary	Definition	Example
<p>PARALLELOGRAM <u>//-gram</u></p>	<p>A parallelogram is a quadrilateral with both pairs of opposite sides <u>parallel</u>.</p>	 <p><math>\square PQRS</math> <math>\overline{PQ} \parallel \overline{SR}</math> and <math>\overline{PS} \parallel \overline{QR}</math></p>
<p>THEOREM 8.3</p>	<p>If a quadrilateral is a parallelogram, then its opposite sides are <u>congruent</u>.</p>	 <p>If PQRS is a parallelogram, then <math>\overline{PQ} \cong \overline{SR}</math> and <math>\overline{PS} \cong \overline{QR}</math> <span style="float: right;"><u>opp. sides <math>\cong</math></u></span></p>
<p>THEOREM 8.4</p>	<p>If a quadrilateral is a parallelogram, then its opposite angles are <u>congruent</u>.</p>	 <p>If PQRS is a parallelogram, then <math>\angle P \cong \angle R</math> and <math>\angle S \cong \angle Q</math> <span style="float: right;"><u>opp. <math>\angle</math>s <math>\cong</math></u></span></p>
<p>THEOREM 8.5</p>	<p>If a quadrilateral is a parallelogram, then its consecutive angles are <u>supplementary</u>.</p>	 <p>If PQRS is a parallelogram, then <math>\angle P + \angle Q = 180^\circ</math> and <math>\angle Q + \angle R = 180^\circ</math> <math>\angle R + \angle S = 180^\circ</math> and <math>\angle P + \angle S = 180^\circ</math> <span style="float: right;"><u>CONS. <math>\angle</math>s supp.</u></span></p>
<p>THEOREM 8.6</p>	<p>If a quadrilateral is a parallelogram, then its diagonals <u>bisect</u> each other.</p>	 <p>Diagonals are <math>\overline{PR}</math> and <math>\overline{QS}</math> If PQRS is a parallelogram, then <math>\overline{PM} \cong \overline{MR}</math> and <math>\overline{SM} \cong \overline{MQ}</math> <span style="float: right;"><u>Diagonals bisect</u></span></p> <p style="text-align: center;"><math>m</math> is a mp by Def. of a mp.</p>



□ ABCD

$$m\angle ADB = 40^\circ$$

$$m\angle DBC = 40^\circ \quad \text{A1}$$

$$m\angle BDC = 20^\circ$$

$$m\angle ABD = 20^\circ \quad \text{A1}$$

$$\angle A = 180 - (40 + 20)$$

$$= 180 - 60$$

$$\boxed{\angle A = 120^\circ} \quad \text{CONS. } \angle\text{s SUPP.}$$

$$\boxed{\angle C = 120^\circ} \quad \text{OPP. } \angle\text{s } \cong$$