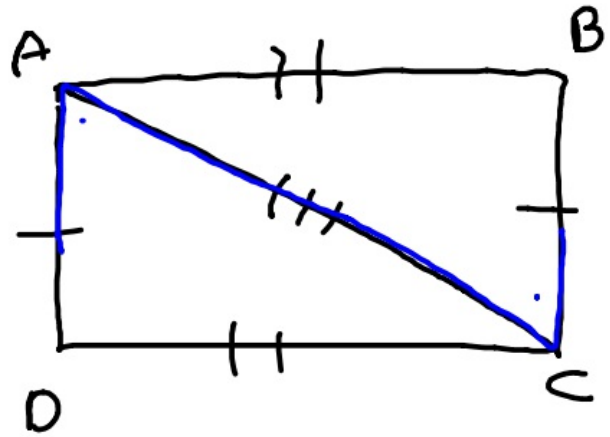


5.22.19 5th Geo

Given: $AD = BC$
 $AB = DC$

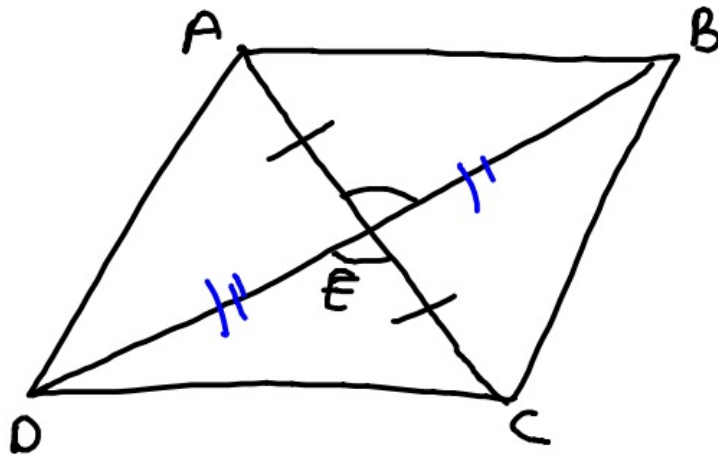
Prove: $\overline{AD} \parallel \overline{BC}$



Statement	Justification
① $AD = BC$	① Given
② $AB = DC$	② Given
③ $AC = AC$	③ Reflexive
④ $\triangle ABC \cong \triangle CDA$	④ SSS
⑤ $\angle DAC = \angle BCA$	⑤ CPCTC
⑥ $\overline{AD} \parallel \overline{BC}$	⑥ If 2 alternate interior \angle 's are =, lines are parallel #

Given: $ABCD$ is a parallelogram

Prove: $\triangle ABE \cong \triangle CDE$



Statement	Justification
① $ABCD$ is a parallelogram	① Given
② $\angle DEC = \angle AEB$	② Vertical \angle 's are =
③ $AE = EC$	③ In a parallelogram, diagonals bisect each other.
④ $DE = EB$	④ " "
⑤ $\triangle ABE \cong \triangle CDE$	⑤ SAS

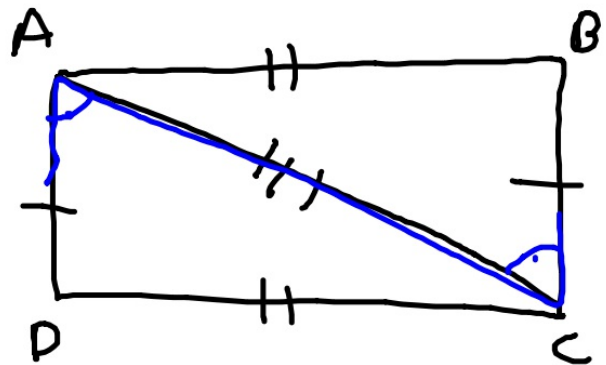
5-22-19

6th Geo

Given: $AD = BC$

$AB = DC$

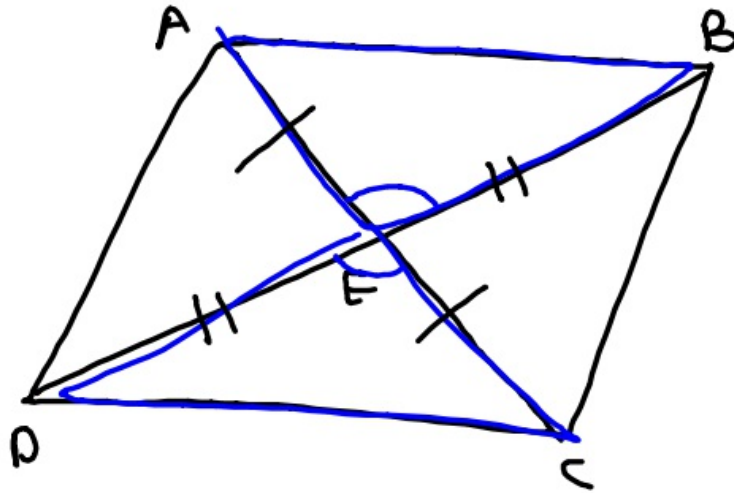
Prove: $\overline{AD} \parallel \overline{BC}$



Statement	Justification
① $AD = BC$	① Given
② $AB = DC$	② Given
③ $AC = AC$	③ Reflexive
④ $\triangle ADC \cong \triangle CAB$	④ SSS
⑤ $\angle DAC = \angle BCA$	⑤ CPCTC
⑥ $\overline{AD} \parallel \overline{BC}$	⑥ If alternate interior angles are \cong , lines are parallel.

Given: ABCD is a parallelogram

Prove: $\triangle ABE \cong \triangle CDE$



Statement	Justification
① ABCD is a parallelogram	① Given
② $\angle AEB = \angle DEC$	② Vertical \angle 's are $=$.
③ $AE = CE$	③ In a parallelogram, diagonals bisect each other
④ $BE = DE$	④ " \quad " " \quad "
⑤ $\triangle ABE \cong \triangle CDE$	⑤ SAS