

Given: $\angle ABD \cong \angle CDB$
 $\angle ADB \cong \angle CBD$

Prove: $\overline{CD} \cong \overline{AB}$

② Variable
 vertical angles
 reflexive prop
 alt. int. angles

③ Triangle congruency

④ "Prove"

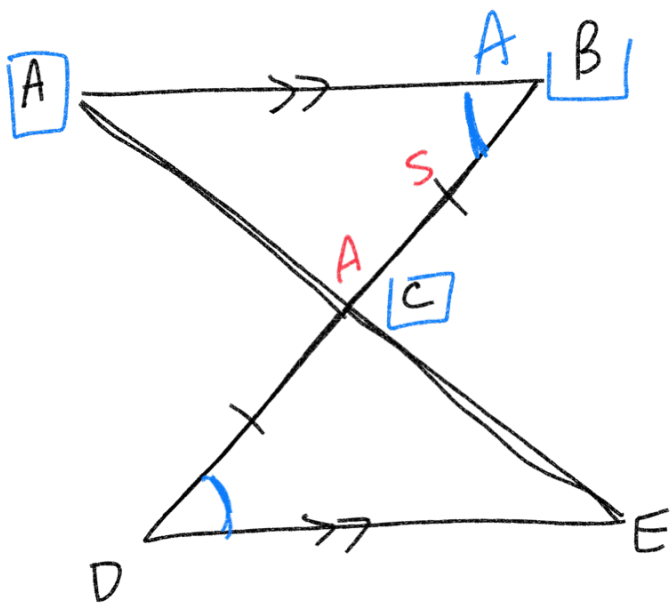
Statements
 $\angle ABD \cong \angle CDB$
 $\angle ADB \cong \angle CBD$
 $\overline{BD} \cong \overline{DB}$
 $\triangle ABD \cong \triangle CDB$
 $\overline{CD} \cong \overline{AB}$

Reasons
 Given
 Given] Given ①

Reflexive Prop

ASA

CPCTC



Given

$$\overline{AB} \parallel \overline{DE}$$

$$\overline{BC} \cong \overline{DC}$$

Prove: $\overline{AB} \cong \overline{ED}$

Reasons

Given

Given

vertical angles
alternate interior

ASA

CPCTC

Given

Statements

$$\overline{AB} \parallel \overline{DE}$$

$$\overline{BC} \cong \overline{DC}$$

$$\angle ACB \cong \angle ECD$$

$$\angle B \cong \angle D$$

$$\text{or } \angle ABC \cong \angle EDC$$

$$\Delta ACB \cong \Delta ECD$$

$$\overline{AB} \cong \overline{ED}$$

}

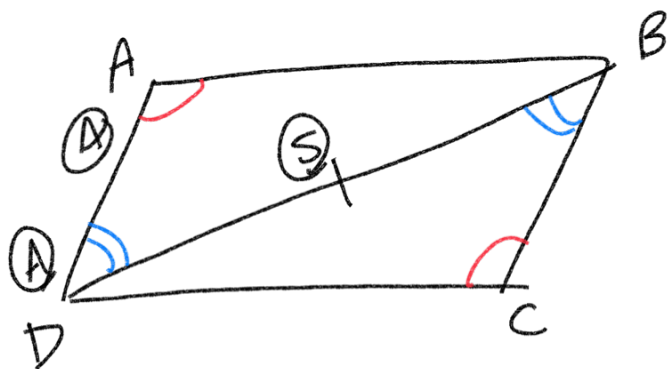
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}

triangle
congruency

Proof

variable



Given

$$\angle BAD \cong \angle DCB$$

$$\angle ADB \cong \angle CBD$$

Prove

$$\overline{AD} \cong \overline{CB}$$

Statement

$$\left[\begin{array}{l} \angle BAD \cong \angle DCB \\ \angle ADB \cong \angle CBD \end{array} \right.$$

$$\left[\overline{DB} \cong \overline{DB} \right.$$

$$\left[\triangle ADB \cong \triangle CBD \right.$$

$$\left[\overline{AD} \cong \overline{CB} \right.$$

Reason

Given

Given

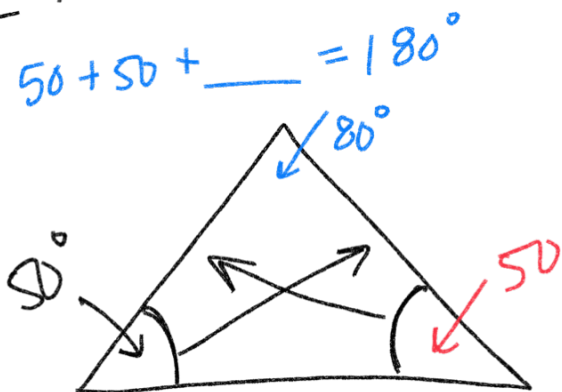
Reflexive Prop

AAS

C.P.C.T.C

Equal angles open to
equal sides

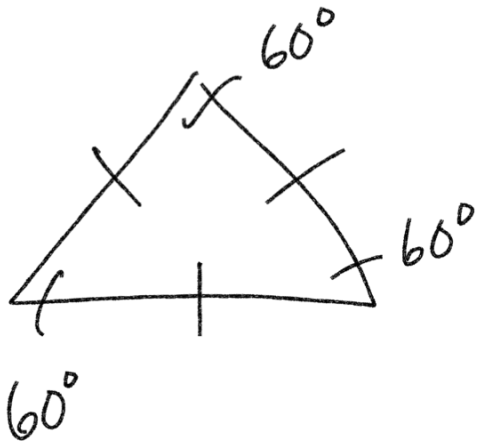
Isosceles



$$50 + 50 + \underline{\quad} = 180^\circ$$

$$\begin{array}{r} 100 + \underline{\quad} = 180 \\ - 100 \qquad - 100 \\ \hline \underline{\quad} = 80^\circ \end{array}$$

$$\frac{180^\circ}{3}$$

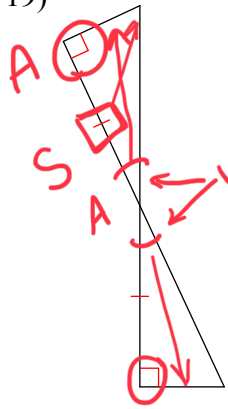


All 3 sides equal,
All 3 angles equal

Equilateral

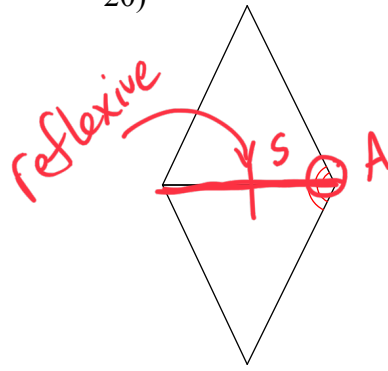
SSS, SAS, ASA, AAS

19)



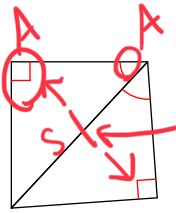
reflexive
vertical
alt. int.
vertical angles
ASA

20)



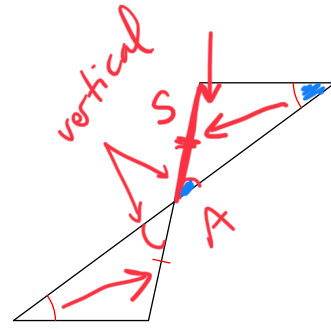
reflexive
Not congruent

21)



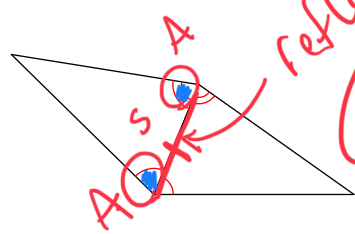
reflexive
AAS

22)



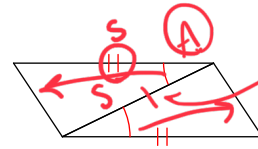
AAS

23)



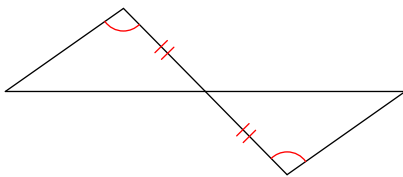
reflexive
ASA

24)

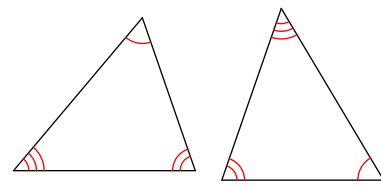


reflexive
SAS

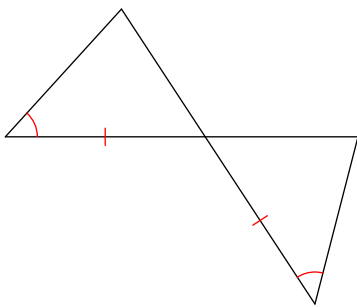
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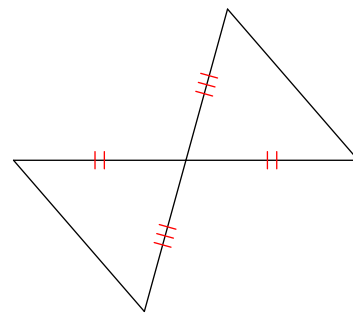
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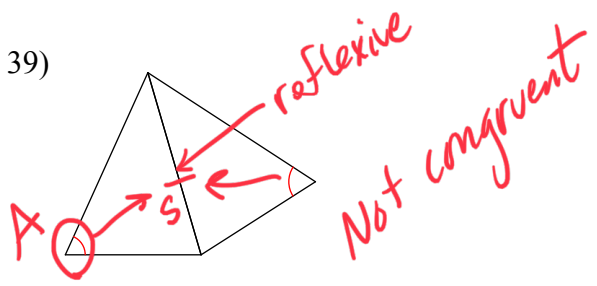
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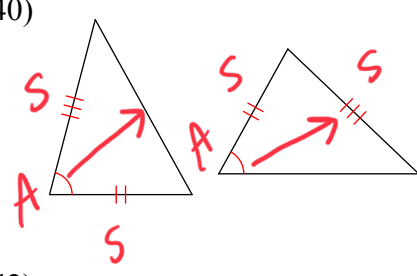
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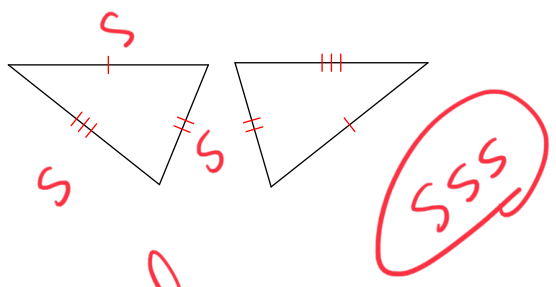
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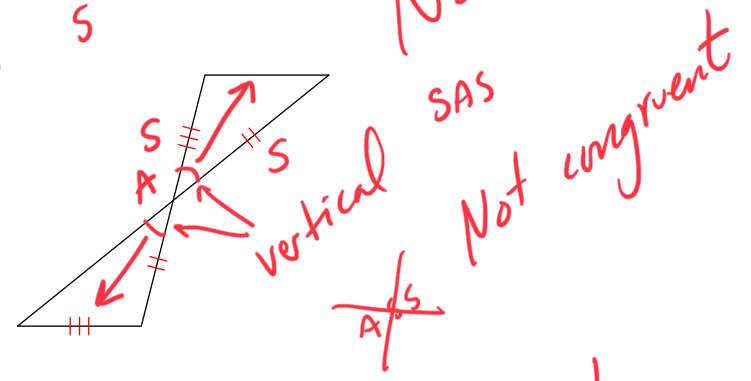
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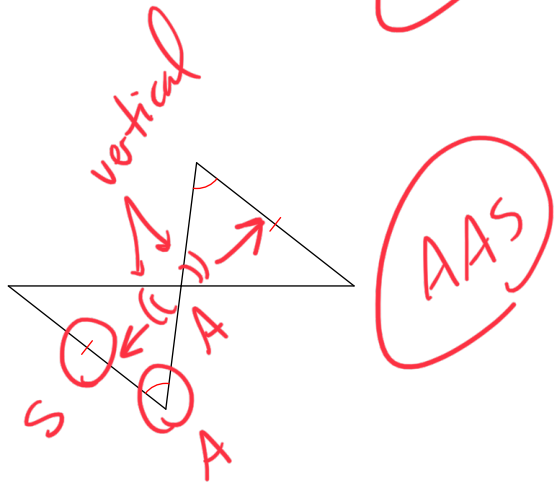
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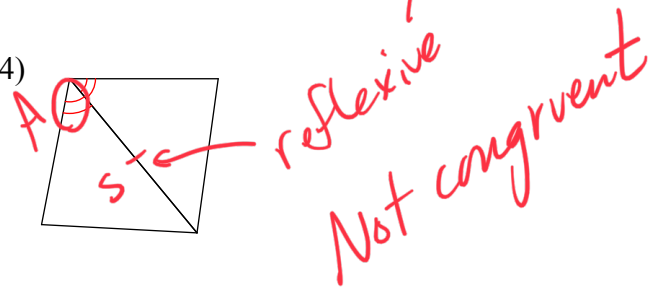
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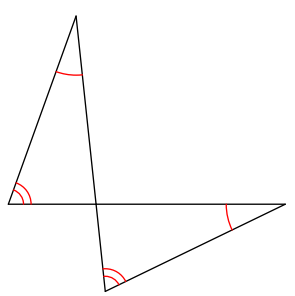
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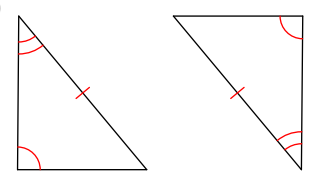
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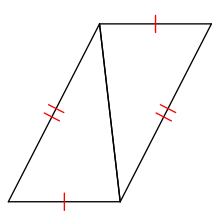
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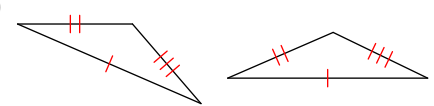
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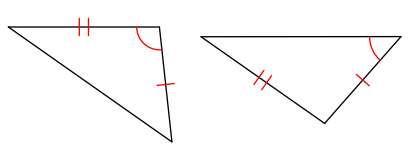
47)



48)



49)



50)

