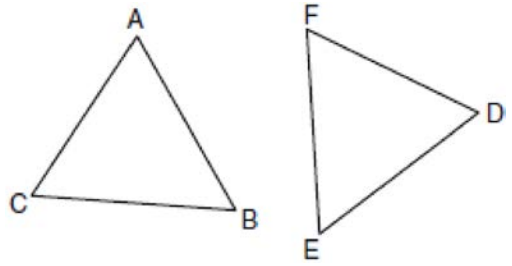
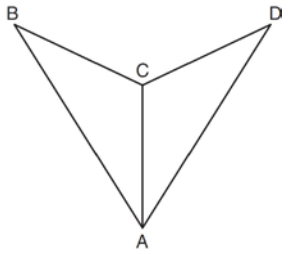
G.G.28: Triangle Congruency 1: Determine the congruence of two triangles by using one of the five congruence techniques (SSS, SAS, ASA, AAS, HL), given sufficient information

1 In the diagram of ΔABC and ΔDEF below, $\overline{AB} \cong \overline{DE}$, $\angle A \cong \angle D$, and $\angle B \cong \angle E$.



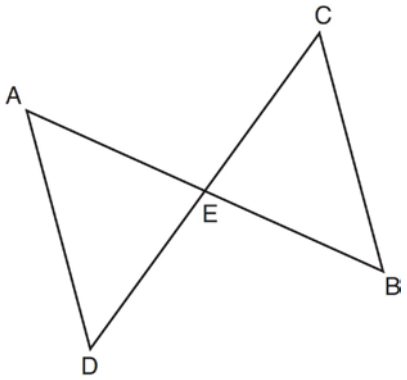
Which method can be used to prove $\Delta ABC \cong \Delta DEF$?
1) SSS
2) SAS
3) ASA
4) HL

2 As shown in the diagram below, $\overline{AC}$ bisects $\angle BAD$ and $\angle B \cong \angle D$.



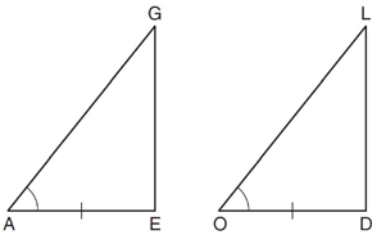
Which method could be used to prove $\Delta ABC \cong \Delta ADC$?
1) SSS
2) AAA
3) SAS
4) AAS

3 In the diagram below of ΔDAE and ΔBCE, $\overline{AB}$ and $\overline{CD}$ intersect at E, such that $\overline{AE} \cong \overline{CE}$ and $\angle BCE \cong \angle DAE$.



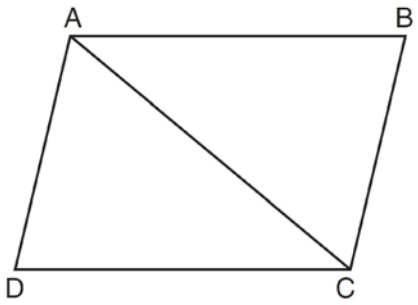
Triangle DAE can be proved congruent to triangle BCE by
1) ASA
2) SAS
3) SSS
4) HL

4 In the diagram below of ΔAGE and ΔOLD, $\angle GAE \cong \angle LOD$, and $\overline{AE} \cong \overline{OD}$.



To prove that ΔAGE and ΔOLD are congruent by SAS, what other information is needed?
1) $\overline{GE} \cong \overline{LD}$
2) $\overline{AG} \cong \overline{OL}$
3) $\angle AGE \cong \angle OLD$
4) $\angle AEG \cong \angle ODL$

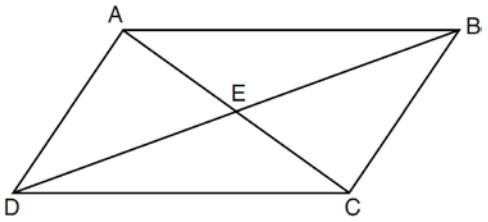
5 In the diagram of quadrilateral $ABCD$, $\overline{AB} \parallel \overline{CD}$, $\angle ABC \cong \angle CDA$, and diagonal $\overline{AC}$ is drawn.



Which method can be used to prove ΔABC is congruent to ΔCDA?
1) AAS
2) SSA
3) SAS
4) SSS

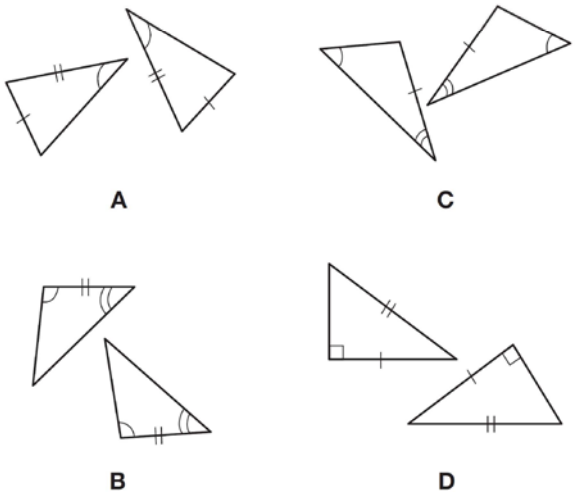
6 The diagonal $\overline{AC}$ is drawn in parallelogram $ABCD$. Which method can *not* be used to prove that $\Delta ABC \cong \Delta CDA$?
1) SSS
2) SAS
3) SSA
4) ASA

7 In parallelogram $ABCD$ shown below, diagonals $\overline{AC}$ and $\overline{BD}$ intersect at E.



Which statement must be true?
1) $\overline{AC} \cong \overline{DB}$
2) $\angle ABD \cong \angle CBD$
3) $\Delta AED \cong \Delta CEB$
4) $\Delta DCE \cong \Delta BCE$

8 In the diagram below, four pairs of triangles are shown. Congruent corresponding parts are labeled in each pair.



Using only the information given in the diagrams, which pair of triangles can *not* be proven congruent?
1) *A*
2) *B*
3) *C*
4) *D*

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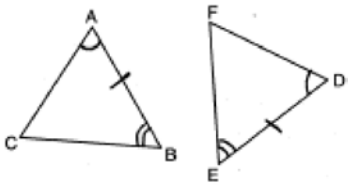
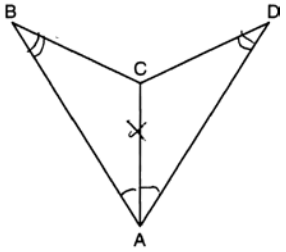
Answer Section

1 ANS: 3



REF: 060902ge

2 ANS: 4



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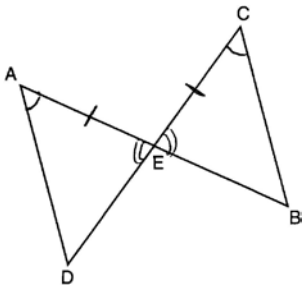
3 ANS: 1



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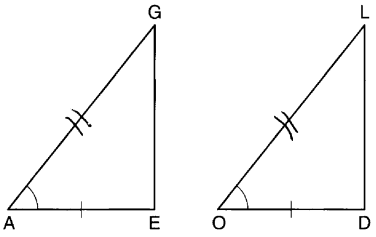
4 ANS: 2



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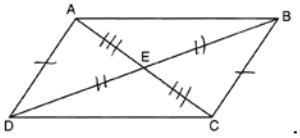
5 ANS: 1 REF: 011122ge

6 ANS: 3 REF: 080913ge

7 ANS: 3



. Opposite sides of a parallelogram are congruent and the diagonals of a parallelogram bisect each other.

REF: 061222ge

8 ANS: 1 REF: 011412ge