NAME Key DATE ________ SCORE ________

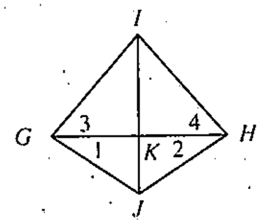
Congruent Triangles

For use after Chapter 4

Complete.

1. Suppose $\triangle ABC \cong \triangle DEF$. Then:

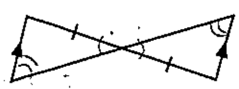
   a. $\angle A \cong \angle$ D **b.** $\overline{AC} \cong$ $\overline{DF}$ **c.** $\overline{FE} \cong$ $\overline{CB}$ **d.** $\angle C \cong \angle$ F



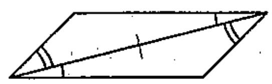
Exs. 2–6

2. If $\overline{GI} \cong \overline{HI}$, then $\angle$ 3 $\cong \angle$ 4.
3. If $\overline{IK} \perp \overline{GH}$, then $\overline{IK}$ is a(n) altitude of $\triangle GHI$.
4. If J is on the perpendicular bisector of $\overline{GH}$, then JG $\cong$ JH.
5. If K is on the bisector of $\angle GIH$, then K is equidistant from $\overrightarrow{IG}$ and $\overrightarrow{IH}$.
6. If $\angle 1 \cong \angle 2$, then $\overline{GJ} \cong \overline{HJ}$.

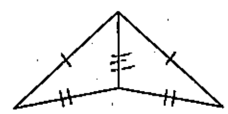
State which congruence method(s), SSS, SAS, ASA, AAS, or HL, can be used to prove the triangles congruent.

7. 

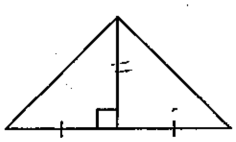
   AAS

8. 

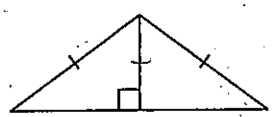
   ASA

9. 

   SSS

10. 

    SAS

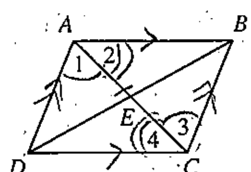
11. 

    HL

12. 

    ASA

Supply the missing reasons in the key steps of the proof.



13. Given: $\overline{AB} \parallel \overline{DC}$; $\overline{AD} \parallel \overline{BC}$
    Prove: $\overline{AE} \cong \overline{CE}$; $\overline{DE} \cong \overline{BE}$

Key steps of proof:

1. $\overline{AB} \parallel \overline{DC}$; $\overline{AD} \parallel \overline{BC}$ — 1. Given
2. $\angle 1 \cong \angle 3$; $\angle 2 \cong \angle 4$ — 2. ∥ lines → Alt. Int. ∠s ≅
   * $AC \cong AC$ → Reflexive
3. $\triangle ADC \cong \triangle CBA$ — 3. ASA
4. $\overline{AD} \cong \overline{CB}$ — 4. CPCTC
   * $\angle AED \cong \angle CEB$ → Vert. ∠s ≅
5. $\triangle AED \cong \triangle CEB$ — 5. AAS
6. $\overline{AE} \cong \overline{CE}$; $\overline{DE} \cong \overline{BE}$ — 6. CPCTC