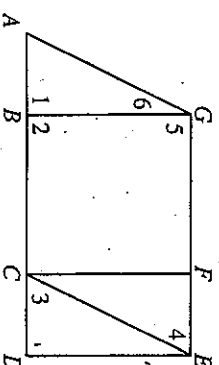


Proving Lines Parallel

For use after Section 3-3

Use the information given to name the segments that must be parallel. If there are no such segments, write *none*.

1. $m\angle A = m\angle 3$ $\overline{GA} \parallel \overline{EC}$
2. $m\angle 3 = m\angle 4$ $\overline{GE} \parallel \overline{AD}$
3. $\overline{GB} \parallel \overline{FC}$ and $\overline{ED} \parallel \overline{FC}$ $\overline{GB} \parallel \overline{ED}$
4. $m\angle 3 + m\angle AGF = 180$ *None*
5. $m\angle D + m\angle 2 = 180$ $\overline{FS} \parallel \overline{ED}$
6. $\angle D \cong \angle 1$ $\overline{GB} \parallel \overline{ED}$
7. $m\angle 6 + m\angle 5 = 180 - m\angle A$ $\overline{GE} \parallel \overline{AD}$
8. $\overline{GB} \perp \overline{AD}$ and $\overline{ED} \perp \overline{AD}$ $\overline{GB} \parallel \overline{ED}$
9. $\angle 5 \cong \angle 1$ $\overline{GE} \parallel \overline{AD}$



Exs. 1-9

Find the values of x and y that make $\overline{AB} \parallel \overline{DC}$ and $\overline{AD} \parallel \overline{BC}$.

10. $5x+3=48$
 $5x=45$
 $x=9$
 $6y=180 - (5(9)+3) - 48 = 150$
 $6y=150$
 $y=25$

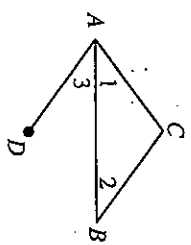
11. $2x=42$
 $x=21$
 $8y+2+2(21)=180$
 $8y+42=180$
 $8y=138$
 $y=17$

Supply the statements or reasons needed to complete the proof.

12. Given: \overrightarrow{AB} bisects $\angle CAD$;

$\angle 1 \cong \angle 2$

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



Proof:	Statements	Reasons
	1. \overrightarrow{AB} bisects $\angle CAD$.	1. Given
	2. $\angle 3 \cong \angle 1$	2. def. of bisector
	3. $\angle 1 \cong \angle 2$	3. Given
	4. $\angle 3 \cong \angle 2$	4. Transitive Prop.
	5. $\overline{AD} \parallel \overline{BC}$	5. Alt. int. $\angle s \cong \rightarrow \parallel$ lines