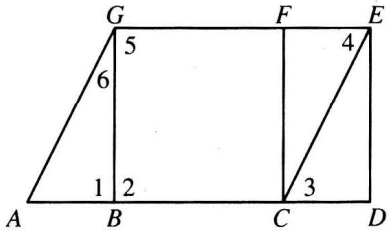
Name: _____ Date: _____ Row: _____ Period: _____

Assignment #: _____

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*.

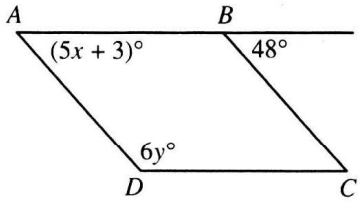


Exs. 1–9

1. $m\angle A = m\angle 3$ _____
2. $m\angle 3 = m\angle 4$ _____
3. $\overline{GB} \parallel \overline{FC}$ and $\overline{ED} \parallel \overline{FC}$ _____
4. $m\angle 3 + m\angle AGF = 180$ _____
5. $m\angle D + m\angle 2 = 180$ _____
6. $\angle D \cong \angle 1$ _____
7. $m\angle 6 + m\angle 5 = 180 - m\angle A$ _____
8. $\overline{GB} \perp \overline{AD}$ and $\overline{ED} \perp \overline{AD}$ _____
9. $\angle 5 \cong \angle 1$ _____

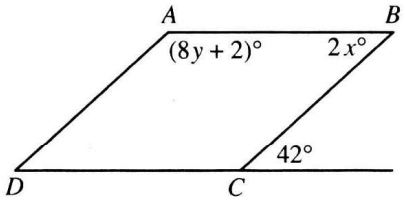
Find the values of x and y that make $\overline{AB} \parallel \overline{DC}$ and $\overline{AD} \parallel \overline{BC}$.

10.



$x =$ _____, $y =$ _____

11.

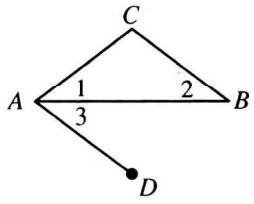


$x =$ _____, $y =$ _____

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:

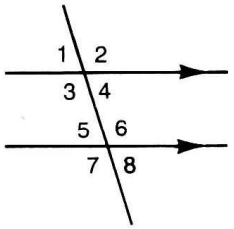
Statements	Reasons
1. $\overrightarrow{AB}$ bisects $\angle CAD$.	1. _____
2. $\angle 3 \cong \angle 1$	2. _____
3. _____	3. Given
4. $\angle 3 \cong \angle 2$	4. _____
5. $\overline{AD} \parallel \overline{BC}$	5. _____
	_____

Practice 9

When Lines and Planes Are Parallel

Lessons 3-1 through 3-3

In Exercises 1–4, classify each pair of angles as corresponding, alternate interior, or same-side interior angles.



Exs. 1–8

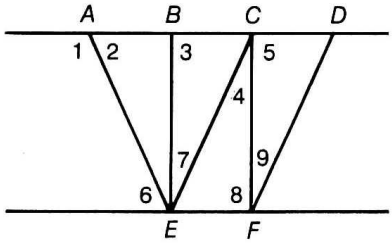
1. $\angle 4$ and $\angle 5$ _____
2. $\angle 4$ and $\angle 8$ _____
3. $\angle 3$ and $\angle 5$ _____
4. $\angle 3$ and $\angle 7$ _____
5. Name all angles congruent to $\angle 2$. _____
6. Name all angles supplementary to $\angle 6$. _____
7. If $m\angle 1 = 35$, then $m\angle 8 =$ _____.
8. If $m\angle 3 = 2x - 5$ and $m\angle 5 = x + 20$, find the value of x. _____

Complete each statement with the word *always*, *sometimes*, or *never*.

9. Two lines that do not intersect are _____ parallel.
10. Two lines perpendicular to a third line are _____ parallel to each other.
11. Two skew lines are _____ coplanar.
12. Two lines that lie in parallel planes are _____ skew.
13. If two parallel lines are cut by a transversal, same-side interior angles are _____ supplementary.
14. If two parallel planes are cut by a third plane, then the lines of intersection are _____ parallel.

In Exercises 15–20, use the given information to name the segments that must be parallel. If there are no such segments, write *none*.

15. $\angle 7 \cong \angle 4$ _____
16. $m\angle 4 = m\angle 9$ _____
17. $\angle 1$ is supplementary to $\angle 6$. _____
18. $\overline{EF} \perp \overline{BE}, \overline{EF} \perp \overline{CF}$ _____
19. $\angle 7 \cong \angle 9$ _____
20. $\angle 3 \cong \angle 5 \cong \angle 8$ _____



Exs. 15–20