



Practice Masters Level A

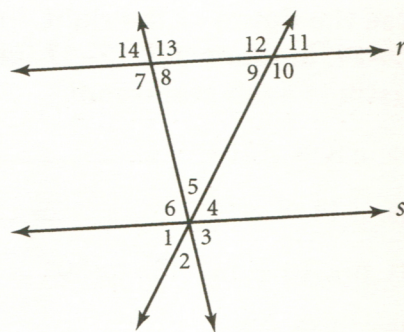
3.3 Parallel Lines and Transversals

Match each term with its definition.

- | | |
|---------------------------------------|---|
| <u>e</u> 1. transversal | a. two nonadjacent interior angles that lie on opposite sides of a transversal |
| <u>a</u> 2. alternate interior angles | b. two nonadjacent exterior angles that lie on opposite sides of a transversal |
| <u>b</u> 3. alternate exterior angles | c. two nonadjacent angles, one interior and one exterior, that lie on the same side of a transversal |
| <u>d</u> 4. same-side interior angles | d. interior angles that lie on the same side of a transversal |
| <u>c</u> 5. corresponding angles | e. a line, ray, or segment that intersects two or more coplanar lines, rays, or segments, each at a different point |

In the figure at the right, $r \parallel s$, $m\angle 2 = 40^\circ$, and $m\angle 4 = 60^\circ$. Find the indicated measures.

- | | |
|-------------------------------------|-------------------------------------|
| 6. $m\angle 1$ <u>60 degrees</u> | 7. $m\angle 3$ <u>80 degrees</u> |
| 8. $m\angle 5$ <u>40 degrees</u> | 9. $m\angle 6$ <u>80 degrees</u> |
| 10. $m\angle 7$ <u>100 degrees</u> | 11. $m\angle 8$ <u>80 degrees</u> |
| 12. $m\angle 9$ <u>60 degrees</u> | 13. $m\angle 10$ <u>120 degrees</u> |
| 14. $m\angle 11$ <u>60 degrees</u> | 15. $m\angle 12$ <u>120 degrees</u> |
| 16. $m\angle 13$ <u>100 degrees</u> | 17. $m\angle 14$ <u>80 degrees</u> |

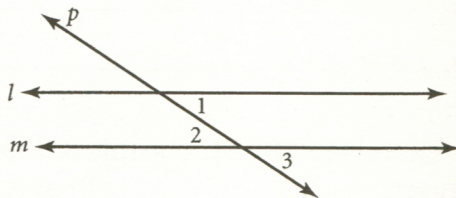


Complete the proof.

Given: $l \parallel m$

Line p is a transversal.

Prove: $\angle 1 \cong \angle 2$



Statements	Reasons
Line l is parallel to line m . Line p is a transversal.	18. Given
$\angle 1 \cong \angle 3$	19. Transversal with \parallel lines means congruent corresponding angles
$\angle 3 \cong \angle 2$	20. Vertical angles are congruent
$\angle 1 \cong \angle 2$	21. Transitive Property of Congruence



Practice Masters Level B

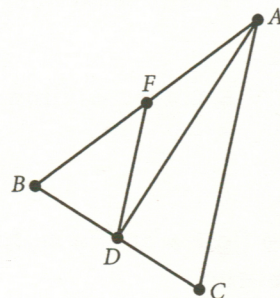
3.3 Parallel Lines and Transversals

Draw a figure for each vocabulary word. Label all lines and angles.

1. alternate interior angles
2. transversal
3. same-side interior angles
4. alternate exterior angles
5. corresponding angles

Drawings may vary

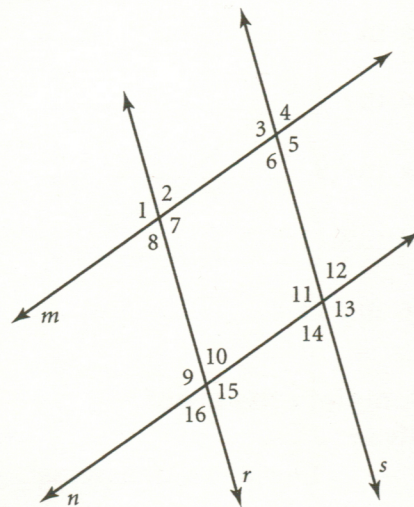
In the figure at the right, $\angle B \cong \angle C$, $m\angle BAC = 40^\circ$, $m\angle B = 70^\circ$, $m\angle BAD = 18^\circ$, and $\overline{FD} \parallel \overline{CA}$. Find the indicated measures.



6. $m\angle DAC$ 22 degrees
7. $m\angle C$ 70 degrees
8. $m\angle FDA$ 22 degrees
9. $m\angle DFB$ 40 degrees
10. $m\angle BDF$ 70 degrees
11. $m\angle ADC$ 88 degrees

Use the figure at the right, in which $r \parallel s$, $m \parallel n$, for Exercises 12–21. In Exercises 12–17, give the theorem or postulate that justifies each statement.

12. $\angle 8 \cong \angle 10$ Alternate Interior Angles Theorem
13. $\angle 14 \cong \angle 12$ Vertical Angles Theorem
14. $m\angle 10 + m\angle 15 = 180^\circ$ Linear Pair Property
15. $\angle 1 \cong \angle 9$ Corresponding Angles Postulate
16. $m\angle 2 + m\angle 3 = 180^\circ$ Same-Side Interior Angles Theorem
17. $\angle 3 \cong \angle 13$ Alternate Exterior Angles Theorem



In Exercises 18–21, complete the two-column proof:

Given: $r \parallel s, m \parallel n$

Prove: $\angle 4 \cong \angle 16$

Statements	Reasons
$r \parallel s, m \parallel n$	18. Given
$\angle 4 \cong \angle 14$	19. Transversal with \parallel lines means congruent alternate exterior angles
$\angle 14 \cong \angle 16$	20. Transversal with \parallel lines means congruent corresponding angles
$\angle 4 \cong \angle 16$	21. Transitive Property of Congruence