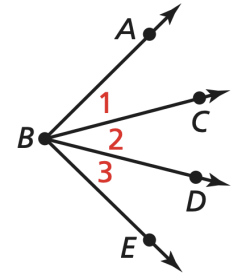


Math 1 - §9.4C (Proving Statements about Segments and Angles)

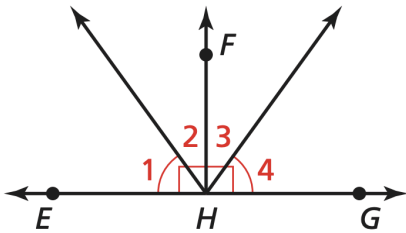
Assignment #9.4C / 19 - 25, 26, 51 - 54 (on page 473)

- 19. ANALYZING RELATIONSHIPS** In the diagram, $m\angle ABD = m\angle CBE$. Show that $m\angle 1 = m\angle 3$.
(See Example 1.)

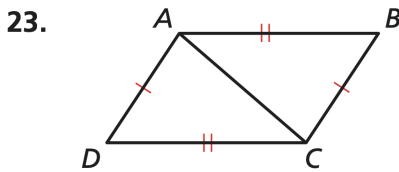


Statement	Reason
1. $m\angle ABD = m\angle CBE$	1.
2. $m\angle ABD = m\angle 1 + m\angle 2$ $m\angle CBE = m\angle 2 + m\angle 3$	2.
3. $m\angle ABD = m\angle 2 + m\angle 3$	3.
4. $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 3$	4.
5. $m\angle 1 = m\angle 3$	5.

- 21. ANALYZING RELATIONSHIPS** Copy and complete the table to show that $m\angle 2 = m\angle 3$.



Equation	Reason
$m\angle 1 = m\angle 4, m\angle EHF = 90^\circ,$ $m\angle GHF = 90^\circ$	Given
Text $m\angle EHF = m\angle GHF$	
$m\angle EHF = m\angle 1 + m\angle 2$ $m\angle GHF = m\angle 3 + m\angle 4$	
$m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$	
	Substitution Property of Equality
$m\angle 2 = m\angle 3$	



REASONING In Exercises 22 and 23, show that the perimeter of $\triangle ABC$ is equal to the perimeter of $\triangle ADC$.

Given: $\overline{AB} \cong \overline{CD}, \overline{AD} \cong \overline{BC}$

Prove: $AC + AB + BC = AC + CD + AD$

Statement	Reason
1. $\overline{AB} \cong \overline{CD}, \overline{AD} \cong \overline{BC}$	1.
2. $AB = CD, AD = BC$	2.
3. $AC = AC$	3.
4. $AC + AB + BC = AC + AB + BC$	4.
5. $AC + AB + BC = AC + CD + AD$	5.

In Exercises 25 and 26, copy and complete the proof. (See Example 3.)

25. Given $PQ = RS$

Prove $PR = QS$



STATEMENTS

REASONS

1. $PQ = RS$

1. _____

2. $PQ + QR = RS + QR$

2. _____

3. _____

3. Segment Addition Postulate

4. $RS + QR = QS$

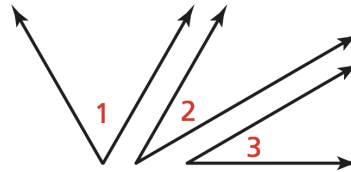
4. Segment Addition Postulate

5. $PR = QS$

5. _____

26. Given $\angle 1$ is a complement of $\angle 2$.
 $\angle 2 \cong \angle 3$

Prove $\angle 1$ is a complement of $\angle 3$.



STATEMENTS

REASONS

1. $\angle 1$ is a complement of $\angle 2$.

1. Given

2. $\angle 2 \cong \angle 3$

2. _____

3. $m\angle 1 + m\angle 2 = 90^\circ$

3. _____

4. $m\angle 2 = m\angle 3$

4. Definition of congruent angles

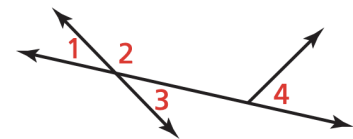
5. _____

5. Substitution Property of Equality

6. $\angle 1$ is a complement of $\angle 3$.

6. _____

Use the figure. (Section 8.6)



51. $\angle 1$ is a complement of $\angle 4$,
and $m\angle 1 = 33^\circ$. Find $m\angle 4$.

52. $\angle 3$ is a supplement of $\angle 2$,
and $m\angle 2 = 147^\circ$. Find $m\angle 3$.

53. Name a pair of vertical angles.

54. The double box-and-whisker plot represents the quiz scores of two students. Identify the shape of each distribution. Which student's scores are more spread out? (Section 7.2)

