

# Practice B

For use with pages 96-101

In Exercises 1-6, use the property to complete the statement.

- Reflexive property of equality:  $m\angle T = \underline{\quad? \quad}$ .
- Transitive property of equality: If  $KL = MN$  and  $\underline{\quad? \quad} = RW$ , then  $\underline{\quad? \quad}$ .
- Addition property of equality: If  $x = 5$ , then  $17 + x = \underline{\quad? \quad}$ .
- Symmetric property of equality: If  $BC = RL$ , then  $\underline{\quad? \quad}$ .
- Substitution property of equality: If  $m\angle A = 45^\circ$  and  $m\angle B = m\angle A + 90^\circ$ , then  $\underline{\quad? \quad}$ .
- Multiplication property of equality: If  $m\angle A = 45^\circ$ , then  $\underline{\quad? \quad} (m\angle A) = 15^\circ$ .

Complete the argument, giving a reason for each step.

7.  $5(2x - 1) = 9x + 2$

Given

$10x - 5 = 9x + 2$

a.  $\underline{\quad? \quad}$

$10x = 9x + 7$

b.  $\underline{\quad? \quad}$

$x = 7$

c.  $\underline{\quad? \quad}$

8.  $8x - 5 = -2x - 15$

Given

$10x - 5 = -15$

a.  $\underline{\quad? \quad}$

$10x = -10$

b.  $\underline{\quad? \quad}$

$x = -1$

c.  $\underline{\quad? \quad}$

9.  $AB = BC$

Given

$AC = AB + BC$

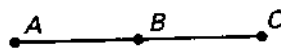
a.  $\underline{\quad? \quad}$

$AC = AB + AB$

b.  $\underline{\quad? \quad}$

$AC = 2(AB)$

c.  $\underline{\quad? \quad}$



10.  $m\angle AEB = m\angle CED$

Given

$m\angle BEC = m\angle BEC$

a.  $\underline{\quad? \quad}$

$m\angle AEB + m\angle BEC = m\angle CED + m\angle BEC$

b.  $\underline{\quad? \quad}$

$m\angle AEC = m\angle AEB + m\angle BEC$

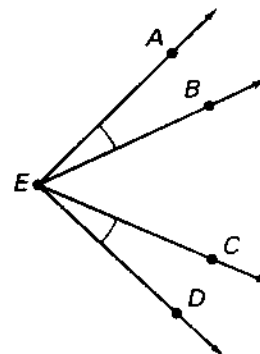
c.  $\underline{\quad? \quad}$

$m\angle BED = m\angle CED + m\angle BEC$

d.  $\underline{\quad? \quad}$

$m\angle AEC = m\angle BED$

e.  $\underline{\quad? \quad}$



11.  $\overleftrightarrow{AB} \perp \overleftrightarrow{EF}, \overleftrightarrow{CD} \perp \overleftrightarrow{EF}$

Given

$m\angle 1 = 90^\circ$

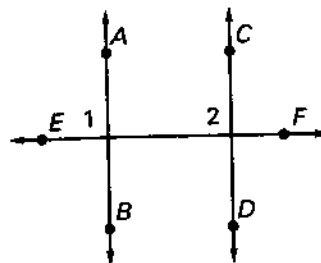
a.  $\underline{\quad? \quad}$

$m\angle 2 = 90^\circ$

b.  $\underline{\quad? \quad}$

$m\angle 1 = m\angle 2$

c.  $\underline{\quad? \quad}$

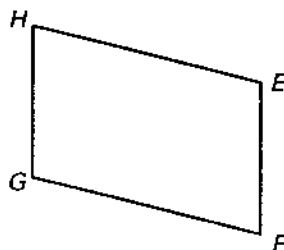


# Practice C

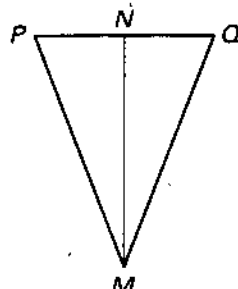
For use with pages 102–107

Mark the diagram with the given information.

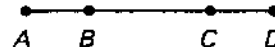
1.  $GH = 4$ ,  $EF = 4$   
 $HE = 6$ ,  $GF = 6$



2.  $N$  is the midpoint of  $PQ$ .



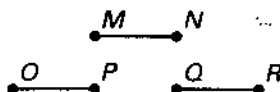
3.  $AC = BD$



Complete the argument, giving a reason for each step.

4. Given:  $OP = MN$ ,  $MN = QR$

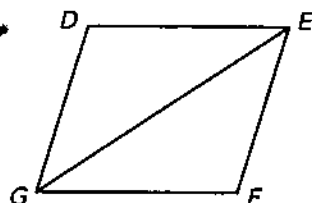
Prove:  $\overline{OP} \cong \overline{QR}$



| Statements                             | Reasons |
|----------------------------------------|---------|
| 1. $OP = MN$ , $MN = QR$               | 1. ?    |
| 2. $OP = QR$                           | 2. ?    |
| 3. $\overline{OP} \cong \overline{QR}$ | 3. ?    |

5. Given:  $DG = 8$ ,  $GF = 8$ ,  $\overline{GF} \cong \overline{EF}$

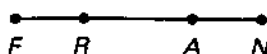
Prove:  $\overline{DG} \cong \overline{EF}$



| Statements                             | Reasons |
|----------------------------------------|---------|
| 1. $DG = 8$ , $GF = 8$                 | 1. ?    |
| 2. $DG = GF$                           | 2. ?    |
| 3. $\overline{DG} \cong \overline{GF}$ | 3. ?    |
| 4. $\overline{GF} \cong \overline{EF}$ | 4. ?    |
| 5. $\overline{DG} \cong \overline{EF}$ | 5. ?    |

6. Given:  $\overline{FR} \cong \overline{AN}$

Prove:  $\overline{FA} \cong \overline{RN}$

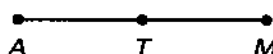


| Statements                             | Reasons |
|----------------------------------------|---------|
| 1. $\overline{FR} \cong \overline{AN}$ | 1. ?    |
| 2. $FR = AN$                           | 2. ?    |
| 3. $RA = RA$                           | 3. ?    |
| 4. $FR + RA = AN + RA$                 | 4. ?    |
| 5. $FR + RA = FA$                      | 5. ?    |
| 6. $AN + RA = RN$                      | 6. ?    |
| 7. $FA = RN$                           | 7. ?    |
| 8. $\overline{FA} \cong \overline{RN}$ | 8. ?    |

7. Write an argument in the form of a paragraph proof.

Given:  $T$  is the midpoint of  $\overline{AM}$ .

Prove:  $AT = \frac{1}{2}AM$



**Practice C**

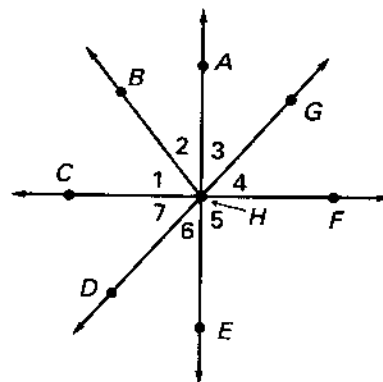
For use with pages 109–116

Make a sketch of the given information. Label all angles which can be determined.

1. Vertical angles which measure  $115^\circ$
2. A linear pair where one angle measures  $115^\circ$
3. Congruent complementary angles
4. Supplementary angles where one angle measures  $115^\circ$

In Exercises 5–10, complete the statement given that  
 $m\angle BHD = m\angle CHE = m\angle EHF = 90^\circ$ .

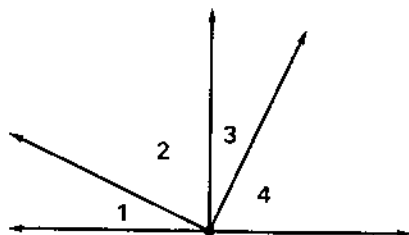
5. If  $m\angle 3 = 42^\circ$ , then  $m\angle 6 = \underline{\quad ? \quad}$ .
6. If  $m\angle BHE = 142^\circ$ , then  $m\angle 1 = \underline{\quad ? \quad}$ .
7. If  $m\angle 1 = 37^\circ$ , then  $m\angle 6 = \underline{\quad ? \quad}$ .
8. If  $m\angle EHG = 132^\circ$ , then  $\angle 7 = \underline{\quad ? \quad}$ .
9. If  $m\angle 7 = 51^\circ$ , then  $m\angle 3 = \underline{\quad ? \quad}$ .
10. If  $m\angle EHB = 153^\circ$ , then  $m\angle 2 = \underline{\quad ? \quad}$ .



11. Complete the proof.

**Given:**  $\angle 1$  and  $\angle 2$  are complementary.  
 $\angle 1 \cong \angle 3$ ,  $\angle 2 \cong \angle 4$

**Prove:**  $\angle 3$  and  $\angle 4$  are complementary.

**Statements****Reasons**

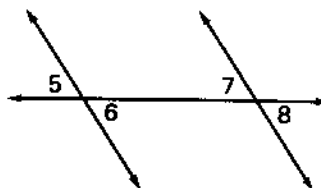
1.  $\underline{\quad ? \quad}$
2.  $m\angle 1 + m\angle 2 = 90^\circ$
3.  $\angle 1 \cong \angle 3$ ,  $\angle 2 \cong \angle 4$
4.  $\underline{\quad ? \quad}$
5.  $m\angle 3 + m\angle 2 = 90^\circ$
6.  $m\angle 3 + m\angle 4 = 90^\circ$
7.  $\underline{\quad ? \quad}$

1. Given
2.  $\underline{\quad ? \quad}$
3.  $\underline{\quad ? \quad}$
4. Definition of congruent angles
5.  $\underline{\quad ? \quad}$
6.  $\underline{\quad ? \quad}$
7. Definition of complementary angles

12. Write a two-column proof.

**Given:**  $m\angle 6 = m\angle 7$

**Prove:**  $\angle 5 \cong \angle 8$



13. Write an argument for Exercise 12 in the form of a paragraph proof.