

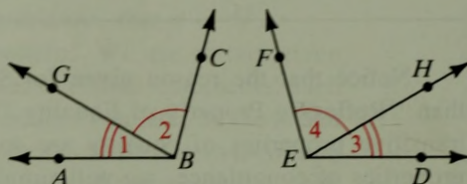
## Classroom Exercises

Justify each statement with a property from algebra or a property of congruence.

1.  $\angle P \cong \angle P$
2. If  $\overline{AB} \cong \overline{CD}$  and  $\overline{CD} \cong \overline{EF}$ , then  $\overline{AB} \cong \overline{EF}$ .
3. If  $RS = TW$ , then  $TW = RS$ .
4. If  $x + 5 = 16$ , then  $x = 11$ .
5. If  $5y = -20$ , then  $y = -4$ .
6. If  $\frac{z}{5} = 10$ , then  $z = 50$ .
7.  $2(a + b) = 2a + 2b$
8. If  $2z - 5 = -3$ , then  $2z = 2$ .
9. If  $2x + y = 70$  and  $y = 3x$ , then  $2x + 3x = 70$ .
10. If  $AB = CD$ ,  $CD = EF$ , and  $EF = 23$ , then  $AB = 23$ .

Complete each proof by supplying missing reasons and statements.

11. Given:  $m\angle 1 = m\angle 3$ ;  
 $m\angle 2 = m\angle 4$   
 Prove:  $m\angle ABC = m\angle DEF$



**Proof:**

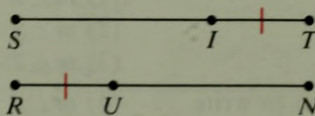
Statements

Reasons

1.  $m\angle 1 = m\angle 3$ ;  
 $m\angle 2 = m\angle 4$
2.  $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$
3.  $m\angle 1 + m\angle 2 = m\angle ABC$ ;  
 $m\angle 3 + m\angle 4 = m\angle DEF$
4.  $m\angle ABC = m\angle DEF$

1. ? given
2. ? add. property of =
3. ? angle addition postulate
4. ? substitution

12. Given:  $ST = RN$ ;  $IT = RU$   
 Prove:  $SI = UN$



**Proof:**

Statements

Reasons

1.  $ST = RN$
2.  $\frac{?}{?} = SI + IT$ ;  
 $\frac{?}{?} = RU + UN$
3.  $SI + IT = RU + UN$
4.  $IT = RU$
5. ?

1. ?
2. ?
3. ?
4. ?
5. ?