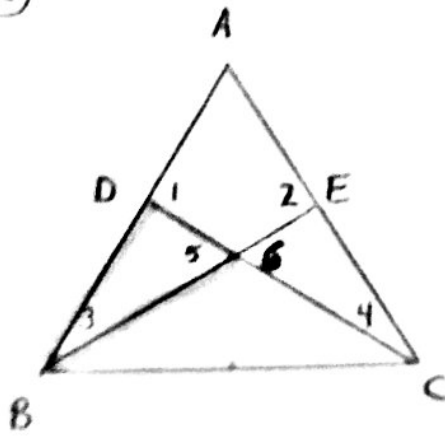


4-2 E.A.T. / Angle Sum Proofs



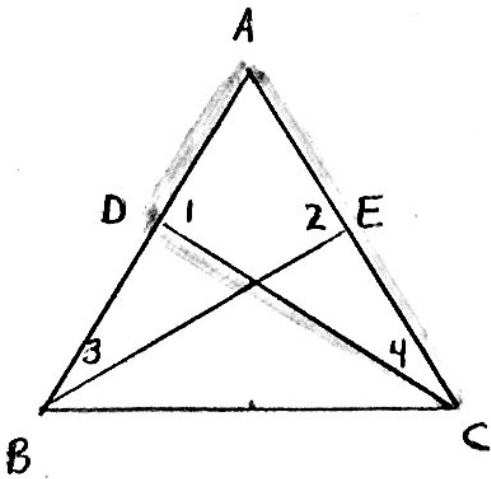
\* Can't use T.S.T.

Given:  $\angle 1 \cong \angle 2$

Prove:  $\angle 3 \cong \angle 4$

- |  |                              |
|--|------------------------------|
| 1. $\angle 1 \cong \angle 2$                       | 1. Given                     |
| 2. $m\angle 1 = m\angle 5 + m\angle 3$             | 2. E.A.T.                    |
| $m\angle 2 = m\angle 6 + m\angle 4$                |                              |
| 3. $m\angle 1 = m\angle 2$                         | 3. def $\cong$               |
| 4. $m\angle 5 + m\angle 3 = m\angle 6 + m\angle 4$ | 4. Subst                     |
| 5. <del><math>m\angle 5 = m\angle 6</math></del>   | 5. <del>Subst</del> def vert |
| $\angle 5 \cong \angle 6$                          |                              |
| 6. $m\angle 5 = m\angle 6$                         | 6. def $\cong$               |
| 7. $m\angle 5 + m\angle 3 = m\angle 5 + m\angle 4$ | 7. Subst                     |
| 8. $m\angle 3 = m\angle 4$                         | 8. Subtra.                   |
| 9. $\angle 3 \cong \angle 4$                       | 9. def $\cong$               |

(D)



\* Can't use E.A.T.

Given:  $\angle 1 \cong \angle 2$

Prove:  $\angle 3 \cong \angle 4$

1.  $\angle 1 \cong \angle 2$

1. Given

2.  $m\angle 2 + m\angle 3 + m\angle A = 180$   
 $m\angle 4 + m\angle 1 + m\angle A = 180$

2. T.S.T.

3.  $m\angle 1 = m\angle 2$

3. def  $\cong$

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

4. Subst.

$m\angle 4 + m\angle 1 + m\angle A$

5.  $m\angle 2 + m\angle 3 = m\angle 4 + m\angle 1$

5. Substr

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

6. Subst

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

7. Substr

8.  $\angle 3 \cong \angle 4$

8. def  $\cong$