

H. Geometry – Chapter 4 – Definition Sheet

Section 4.1

Triangle Sum Theorem

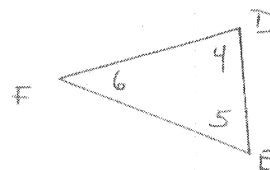
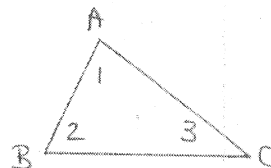
The sum of the measure of the angles in a triangle is 180°

PROOF:

GIVEN: $m\angle 1 = m\angle 4$

$m\angle 2 = m\angle 5$

PROVE: $m\angle 3 = m\angle 6$



Conclusions

Justification

0. $m\angle 1 = m\angle 4$
 $m\angle 2 = m\angle 5$

1. $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$
 $m\angle 4 + m\angle 5 + m\angle 6 = 180^\circ$

2. $m\angle 1 + m\angle 2 + m\angle 3 =$
 $m\angle 4 + m\angle 5 + m\angle 6$

3. $m\angle 3 = m\angle 6$

0. Given

1. Triangle Sum Theorem

2. Substitution

3. Addition P.O.E.

Third Angle Theorem

If two angles in one triangle are equal in measure to two angles
 another triangle, then the third angles in each triangle are equal
 in
 measure to each other.