PRAYER

Most blessed Lord, send the grace of Your Holy Spirit on me to strengthen me that I may learn well the subject I am about to study and by it become a better person for Your glory, the comfort of my family, and for the benefit of Your Church and the world.

Amen.

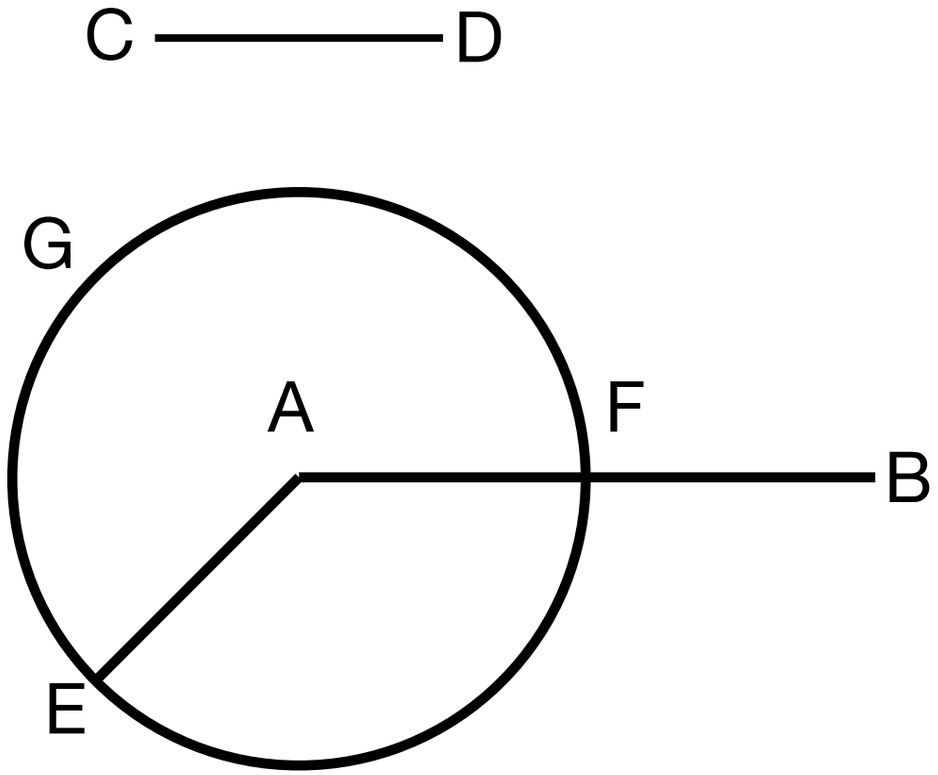
QUIZ

1. Name the line segments, the circle, and the rectilineal angle

$\overline{CD}, \overline{AF}, \overline{AE}, \overline{AB}, \overline{FB}$

Circle FGE

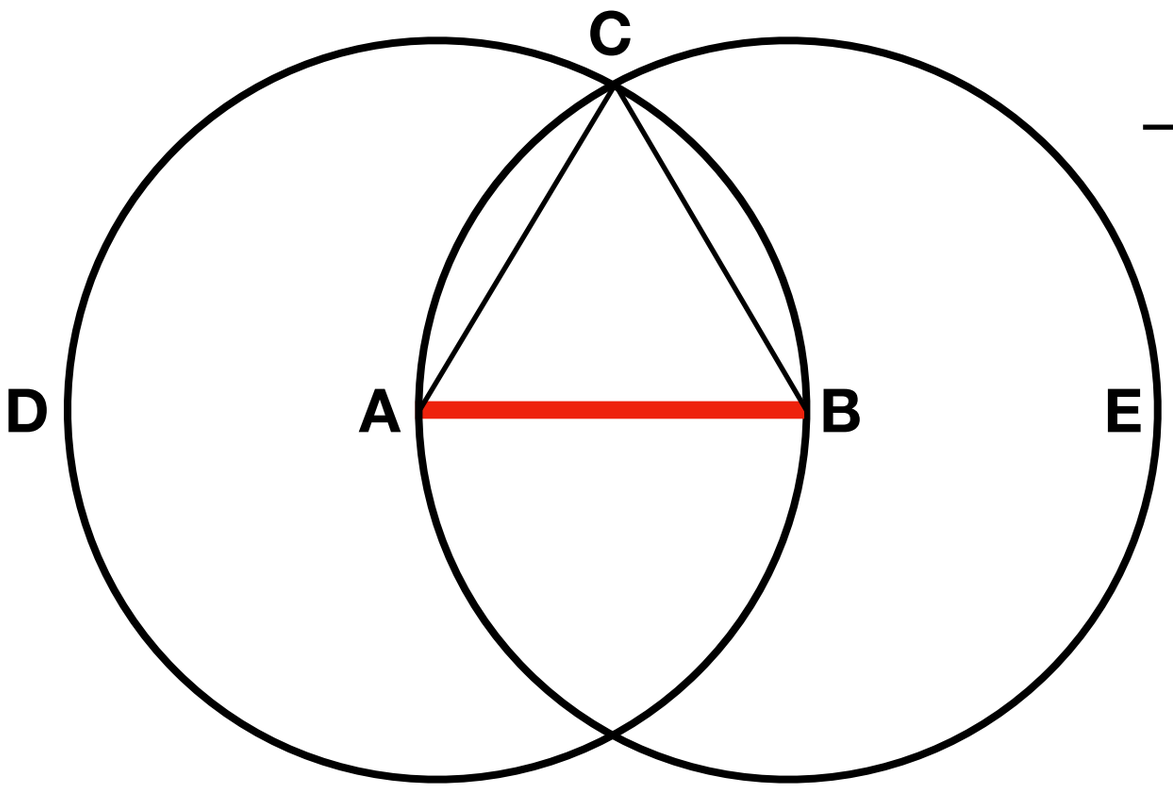
$\measuredangle EAF, \measuredangle EAB$



2. What are the two types of propositions and how do the proofs for them end?

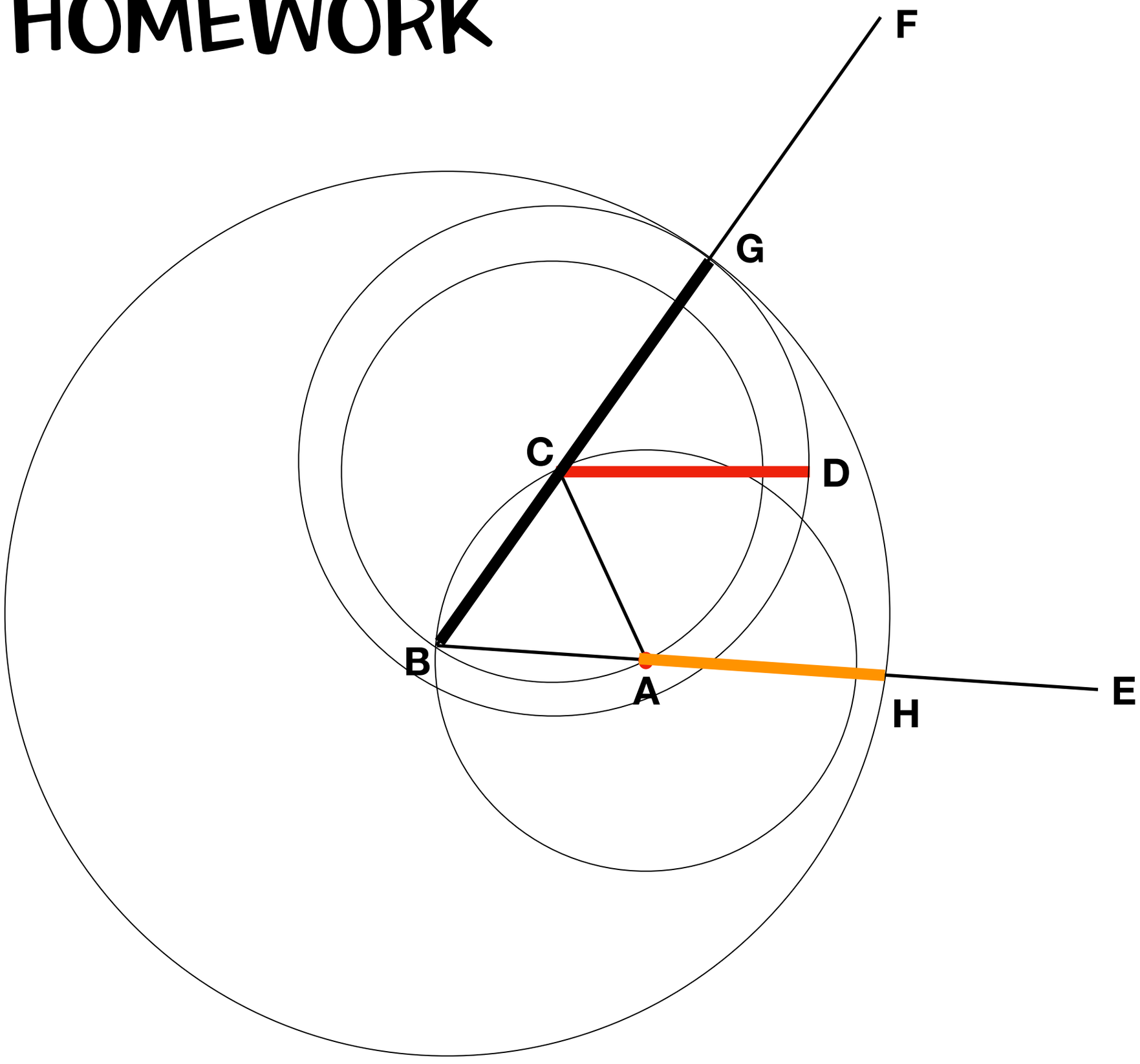
Theorems - Q.E.D.
Problems - Q.E.F

3. Construct an equilateral triangle on line AB.

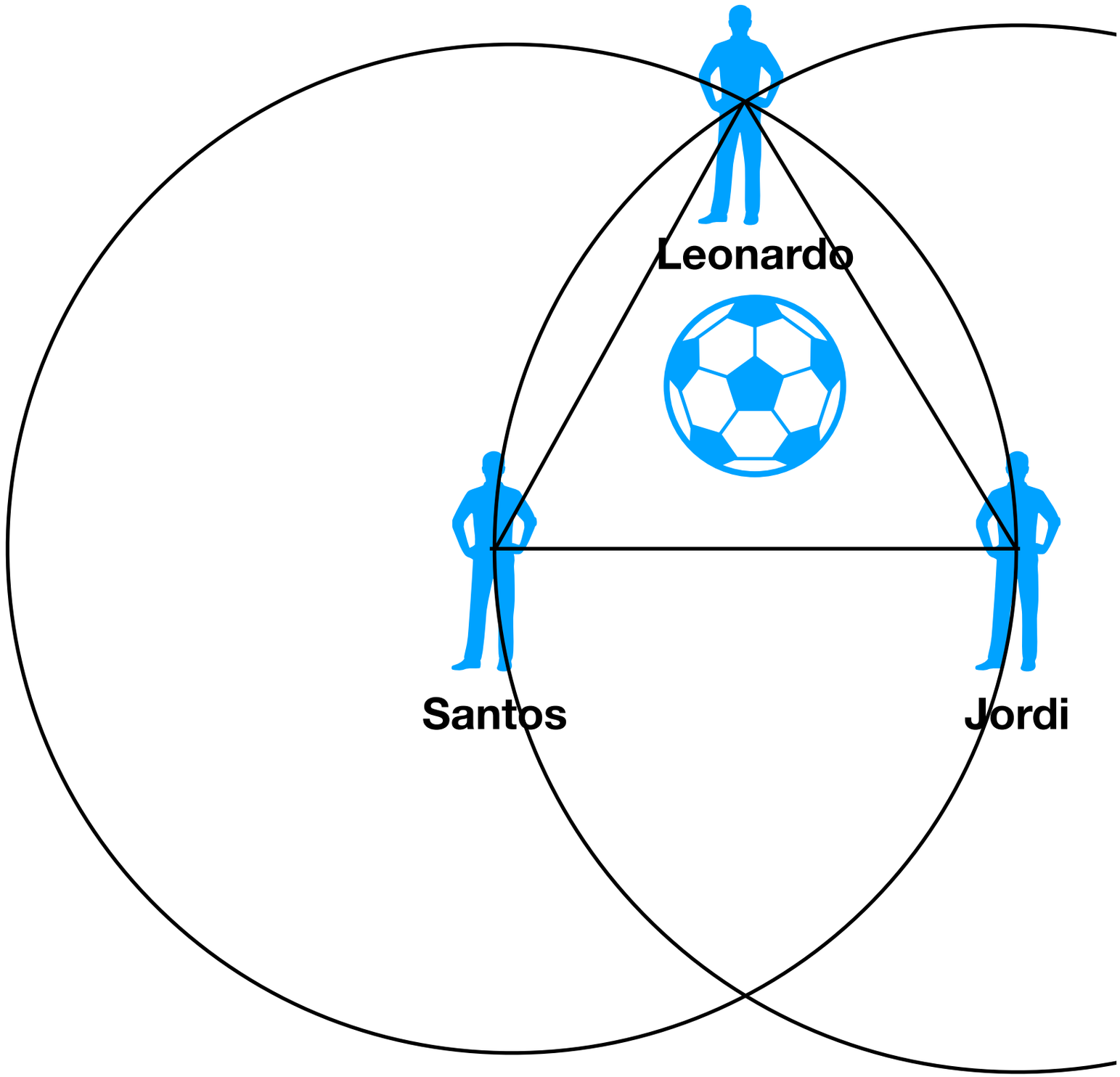


Statement	Reason
$\overline{AB} = \overline{AC}$	$\overline{AB}, \overline{AC}$ are radii of circle BCD and by definition 15 they are equal.
$\overline{BA} = \overline{BC}$	$\overline{BA}, \overline{BC}$ are radii of circle CAE and by definition 15 they are equal.
$\overline{BA} = \overline{BC} = \overline{AC}$	Axiom 1 - things that are equal to the same thing are equal to each other.

HOMEWORK



BH=BG
BA+AH=BC+CG
BA+AH=BA+CG
AH=CG
AH=CG=CD
AH=CD



WHY?

Distance between Santos and Jordie is the same as Santos and Leonardo.

Distance between Jordie and Santos is the same as Jordie and Leonardo.

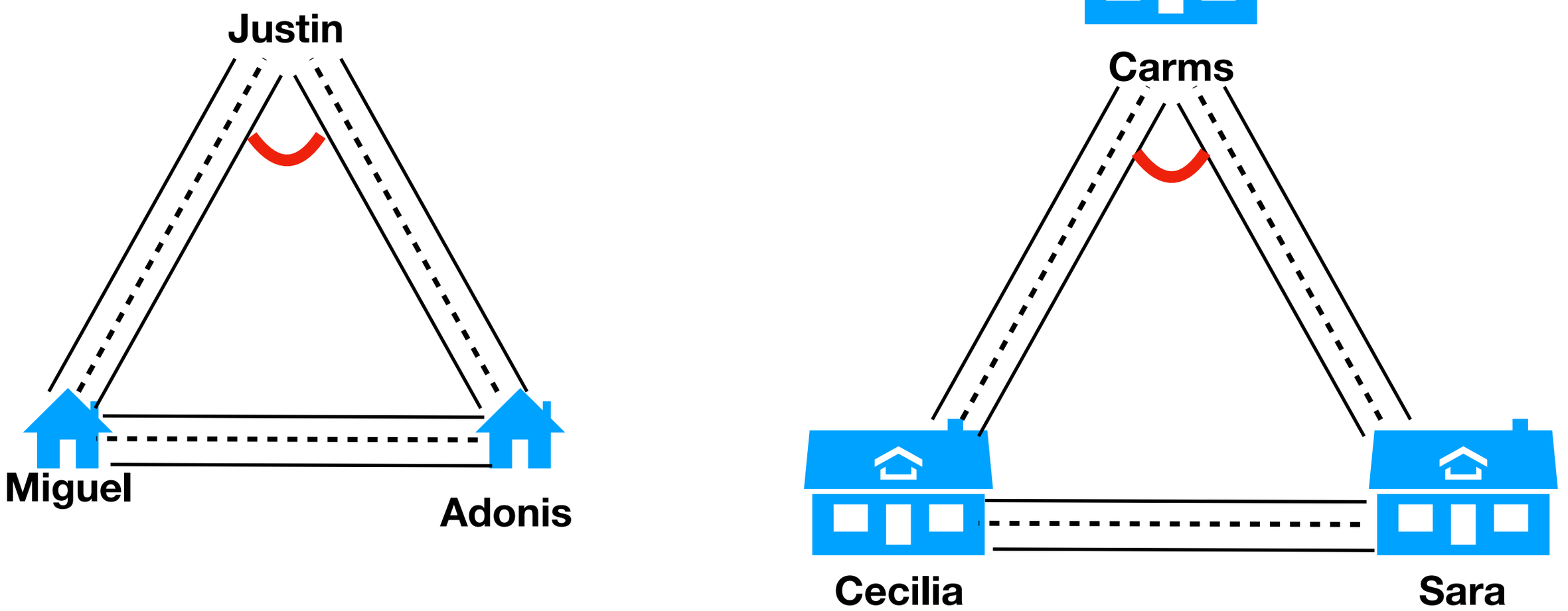
Therefore, the distance between Santos and Leonardo is the same as Jordie and Leonardo.

In conclusion, the distance between all three of them is the same.

And they can now play football!

They will finish at the same time!

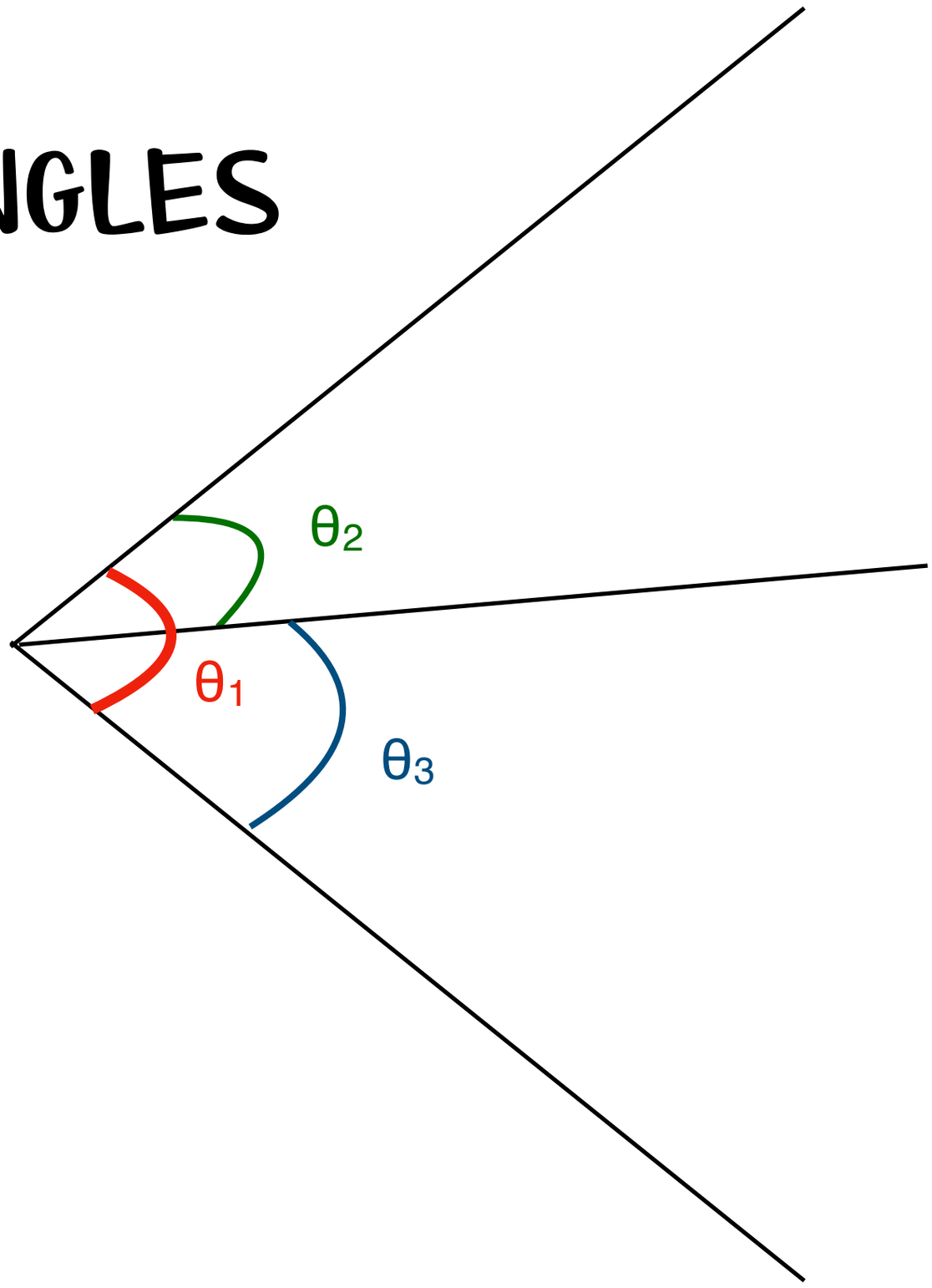
They'll all get extra credit!



WHY?

Since the distance between Justin and Miguel is the same as Carms as Cecilia, if Justin and Carms lived in the same location, Miguel and Celicia would be in the same location. Since the angles are the same and the distance from Justin to Adonis is the same as Carms to Adonis, Adonis and Sara would be in the same location. Therefore, since Miguel is in the same location as Cecilia and Adonis is in the same location as Sara, the distance between Miguel and Adonis is the same as Cecilia and Sara. The total distance among the houses in both groups is the same, therefore they will finish at the same time.

ANGLES



$\measuredangle\theta_1 - \measuredangle\theta_2 = \measuredangle\theta_3$

$\measuredangle\theta_2 + \measuredangle\theta_3 = \measuredangle\theta_1$

PROPOSITION 1.5

(Theorem)

The angles at the base of an isosceles triangle are equal. And if the equal sides be extended, the angles under the base will be equal.

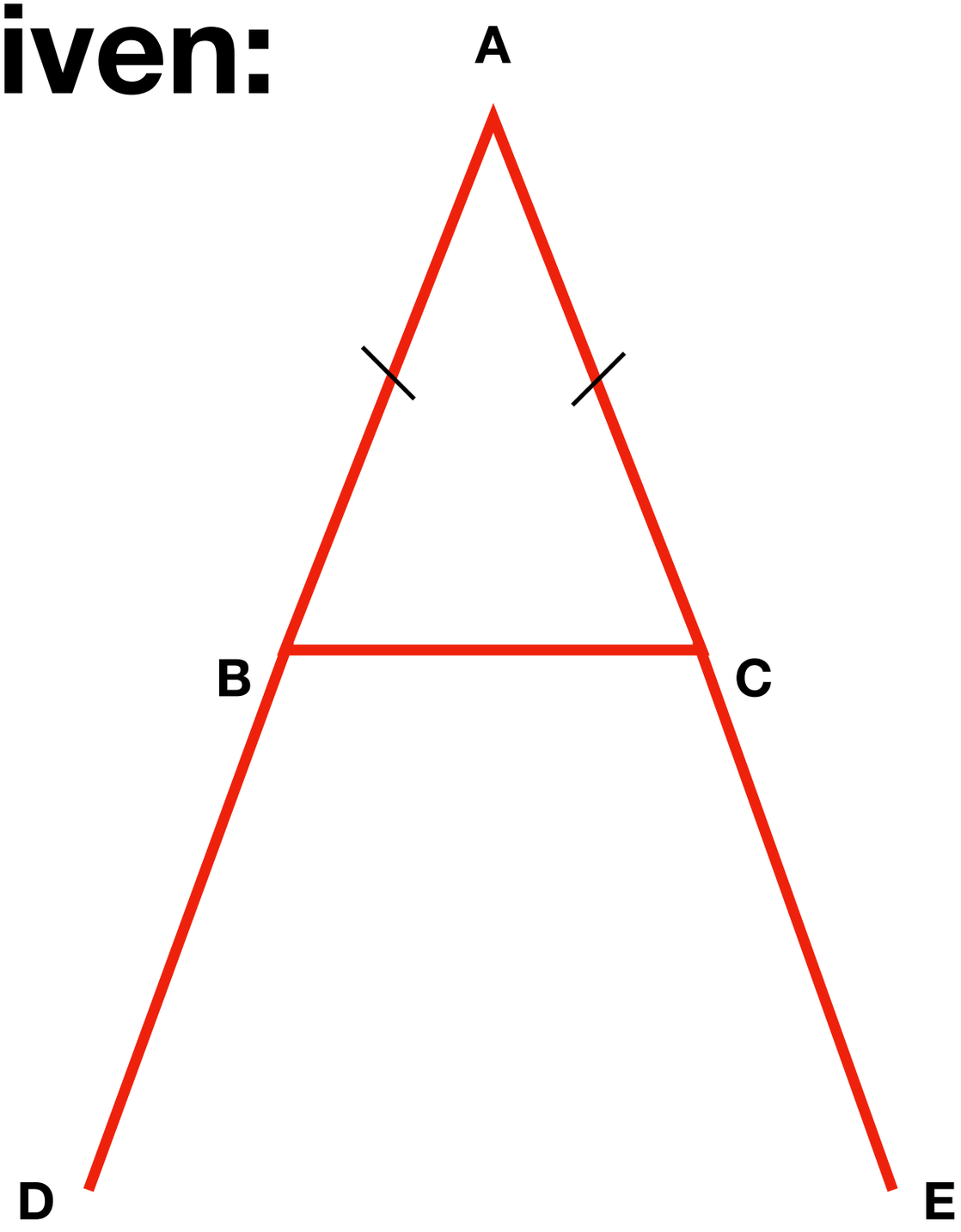
Given: Isosceles triangle

Extend equal sides of the isosceles triangle.

Prove: Angles at the base are equal.

Angles under the base are equal.

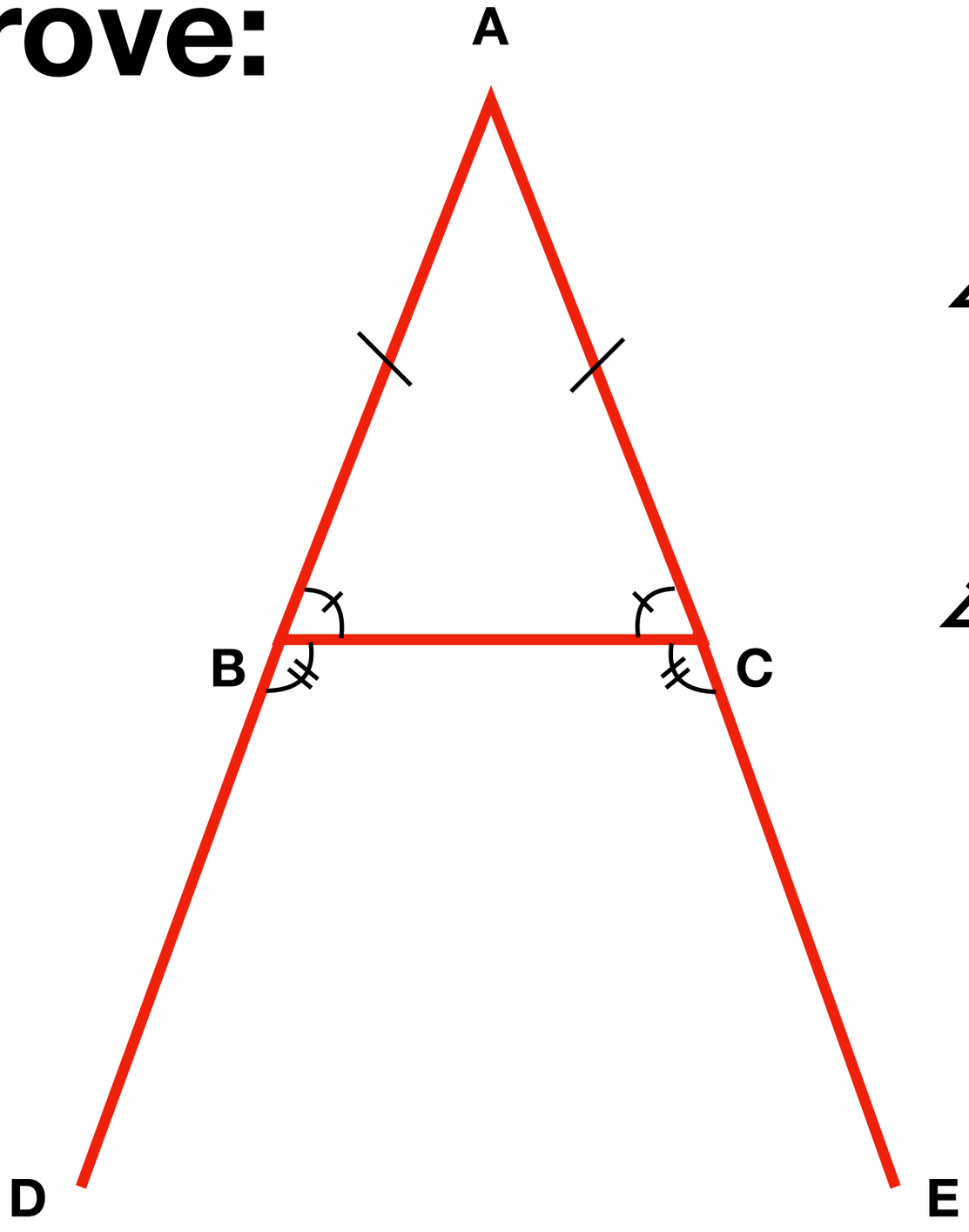
Given:



$$\overline{AB} = \overline{AC}$$

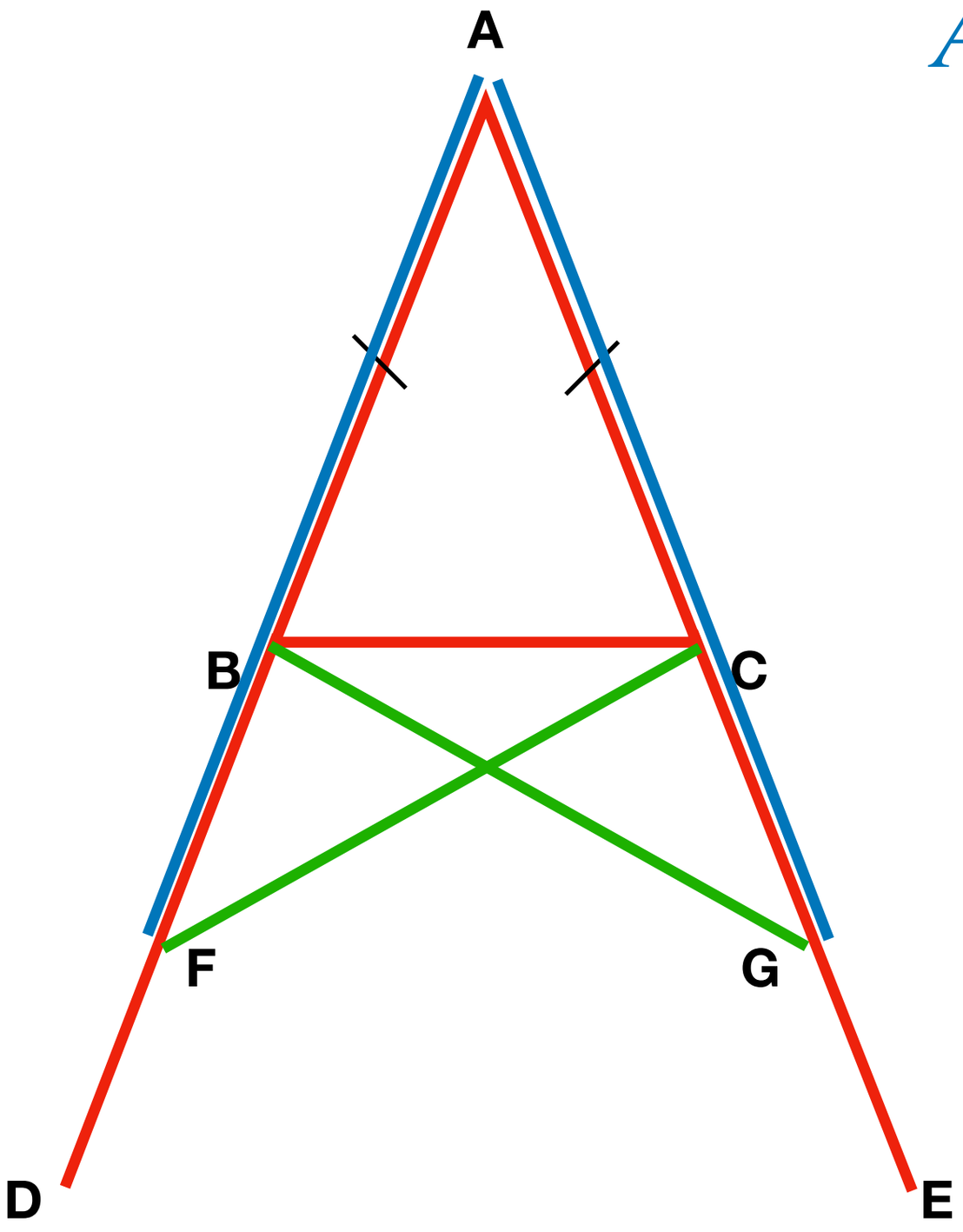
Extend $\overline{AB}, \overline{AC}$ to make $\overline{AD}, \overline{AE}$ **(Postulate 2)**

Prove:



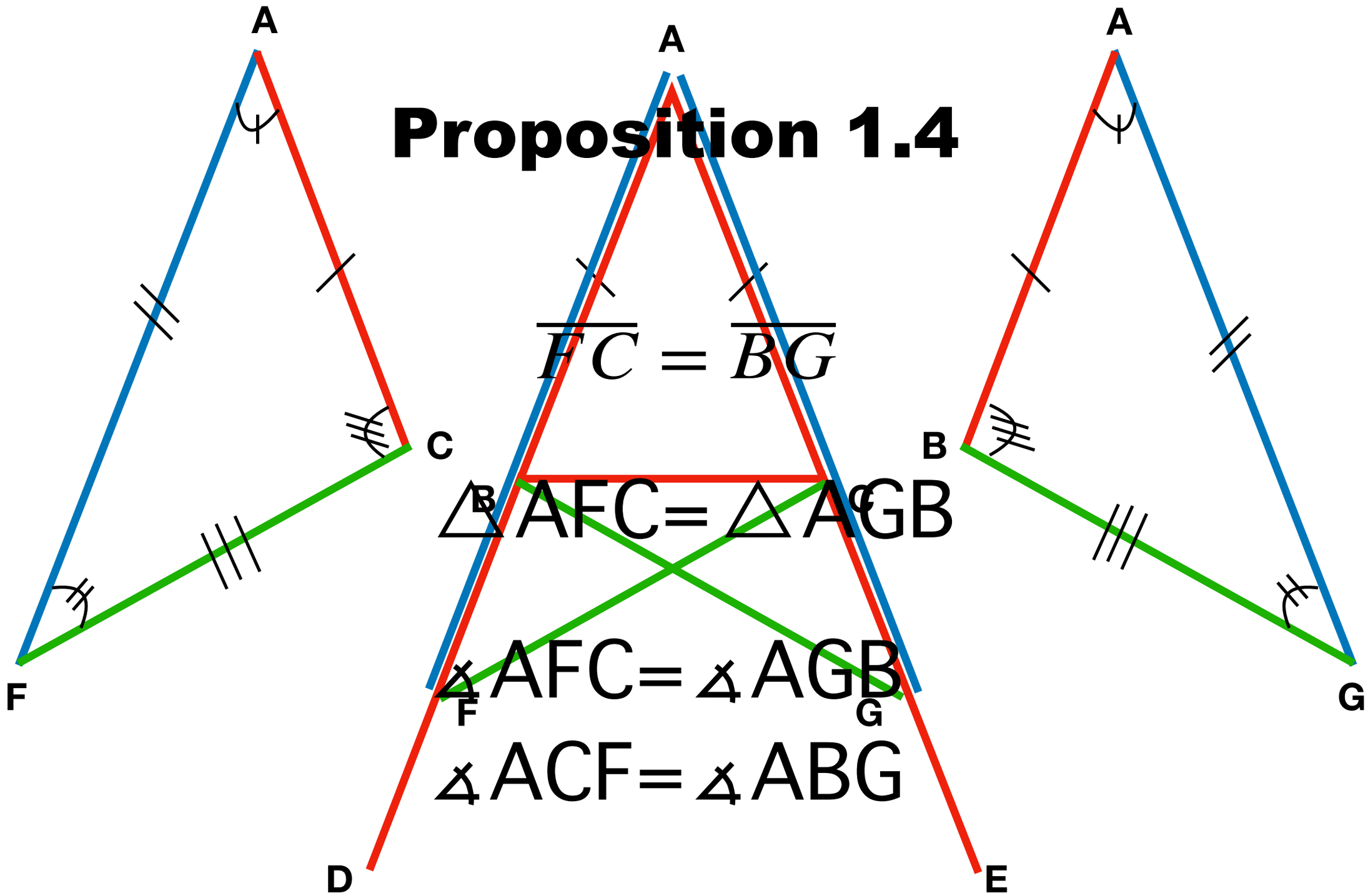
$\measuredangle ABC = \measuredangle ACB$

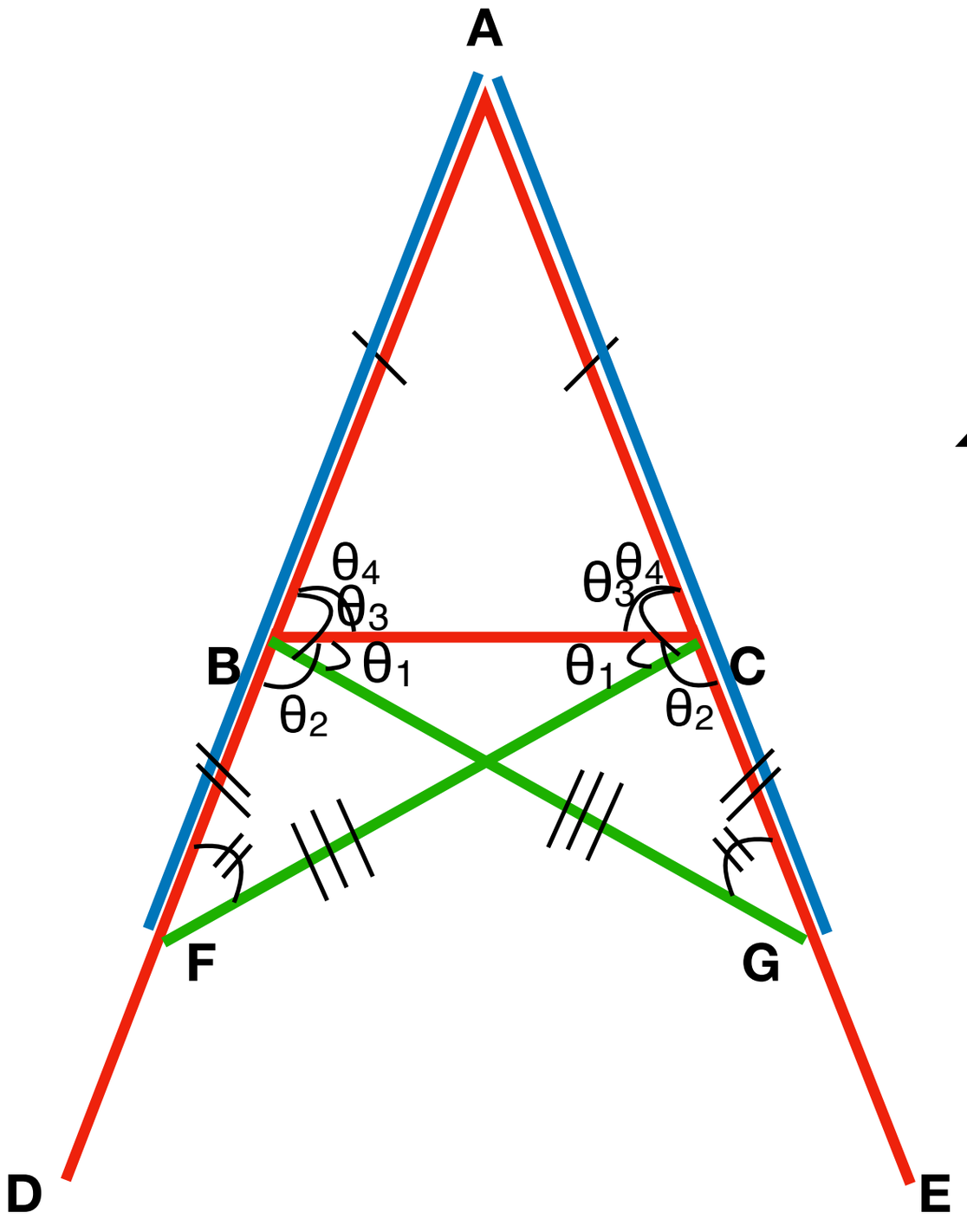
$\measuredangle DBC = \measuredangle ECB$



$$\overline{AF} = \overline{AG}$$

Proposition 1.4





$$\triangle FBC = \triangle GCB$$

$$\measuredangle FCB = \measuredangle GBC = \measuredangle \theta_1$$

$$\measuredangle ACF = \measuredangle ABG = \measuredangle \theta_3$$

$$\measuredangle \theta_3 = \measuredangle \theta_3$$

$$\measuredangle \theta_3 - \measuredangle \theta_1 = \measuredangle \theta_3 - \measuredangle \theta_1$$

$$\measuredangle \theta_4 = \measuredangle \theta_4$$

$$\measuredangle ABC = \measuredangle ACB$$

$$\measuredangle FBC = \measuredangle GCB = \measuredangle \theta_2$$

$$\measuredangle DBC = \measuredangle ECB$$