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.

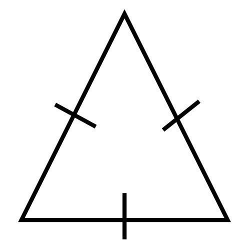
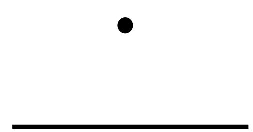
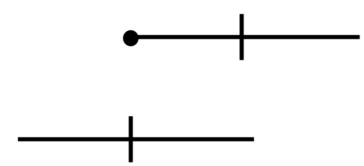
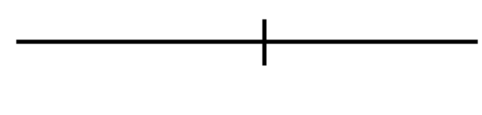
Amen.

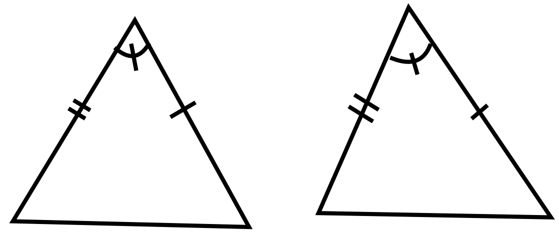
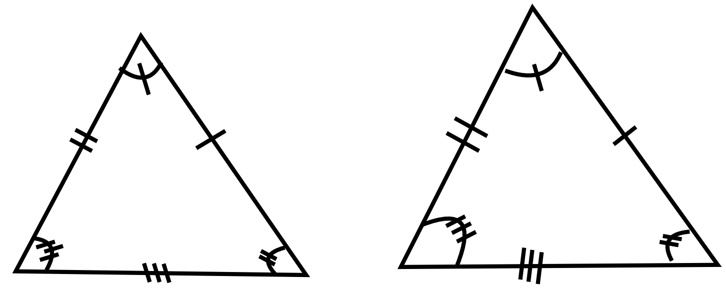
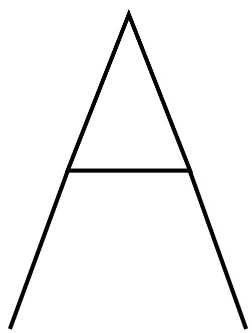
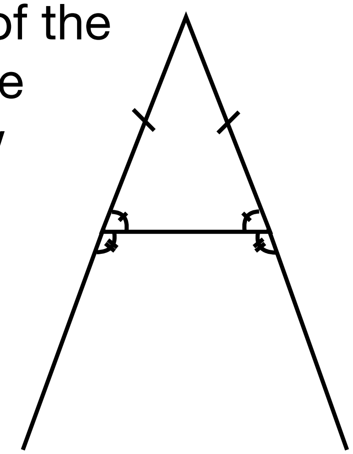
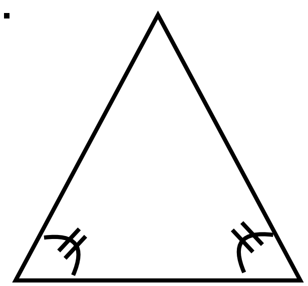
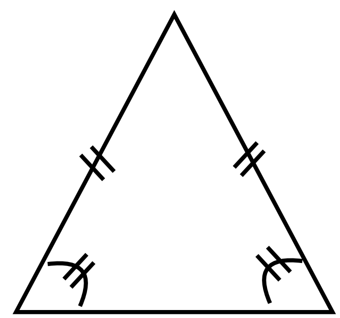
ANNOUNCEMENTS

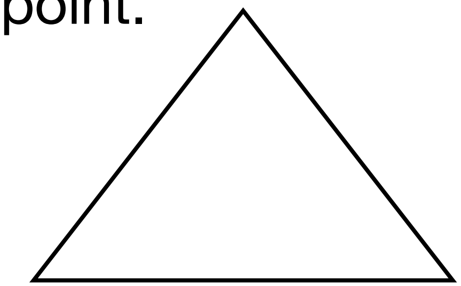
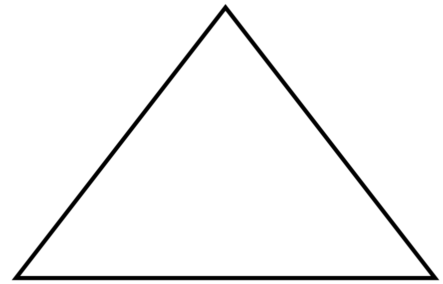
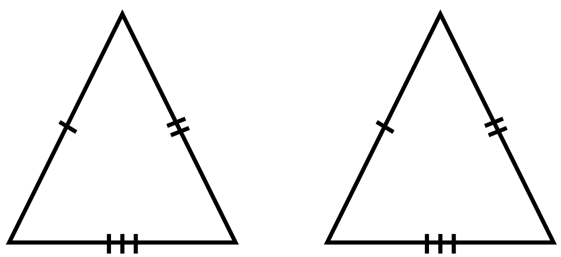
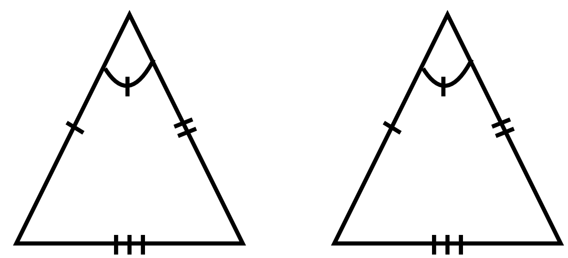
- STUDENT COUNCIL MEETING TOMORROW (@SALVADOR'S HOUSE)
- FOOSBALL TOURNAMENT (11/24)
- ART EXHIBITION (12/6)
- CHRISTMAS GATHERING (12/15)
- TEP CULTURAL EVENT (1/12)

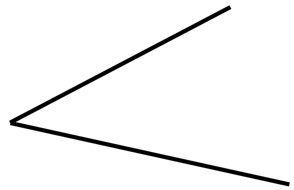
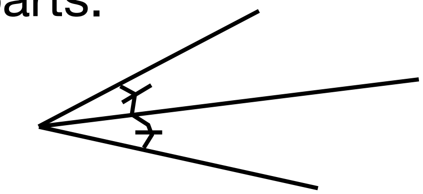
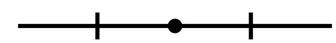
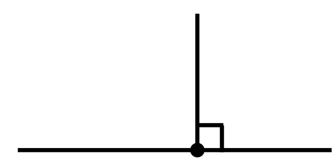
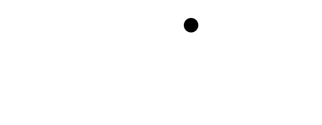
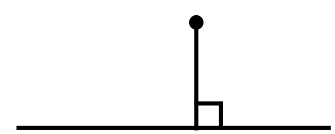
QUIZ ANSWERS

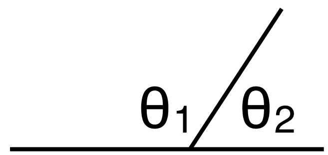
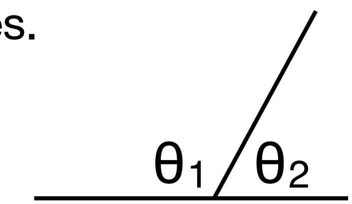
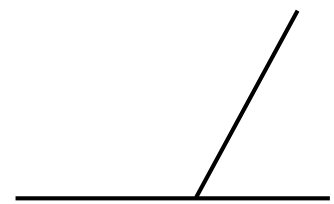
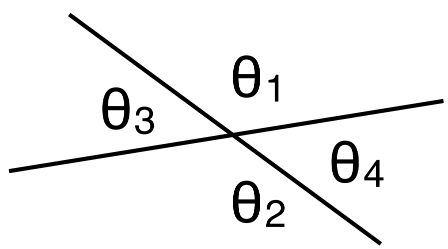
PROPOSITION REVIEW

Prop	Theorem/ Problem	If/Given	Then/Construct/Prove
1.1	Problem	Finite straight	Construct an equilateral triangle 
1.2	Problem	Finite straight line and a point 	Construct a line equal to the given line on the given point. 
1.3	Problem	Two unequal lines	Cut the greater to make it equal to the smaller 

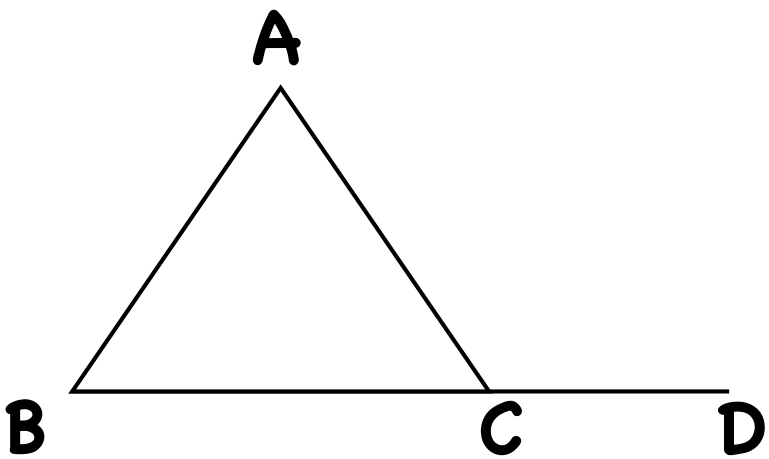
1.4	Theorem	Two triangles with two sides equal to two sides and the angle contained by them is also equal. 	The bases are equal, the triangles are equal, the remaining angles are equal. 
1.5	Theorem	Isosceles triangle and equal lines extended. 	Angles at the base of the isosceles triangle are equal. Angles below the base are equal. 
1.6	Theorem	Triangle with two equal angles. 	Sides opposite the equal angles are equal. 

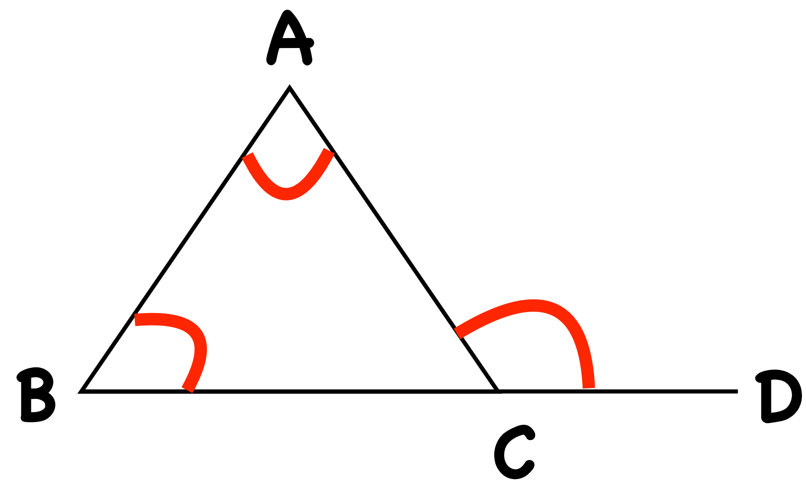
1.7	Theorem	Two straight lines constructed from the ends of a straight line that meet at a point. 	They only meet at one point on the same side. 
1.8	Theorem	Two triangles with two sides equal to two sides and bases equal to base. 	Angle contained by two sides are equal. 

1.9	Problem	Angle 	Construct a line that cuts the angle into equal parts. 
1.10	Problem	Line	Construct a point that cuts the line into equal parts. 
1.11	Problem	A straight line and a point on it. 	Construct a line at right angles to the given line on the given point. 
1.12	Problem	A straight line and a point not on it. 	Construct a line perpendicular to the given line from the given point. 

1.13	Theorem	A straight line standing on a straight line.  	It makes two right angles or the sum of both angles is equal to two right angles. $\theta_1+\theta_2$=sum of two right angles
1.14	Theorem	Two straight lines that meet at a point on another straight line (not on the same side) and make adjacent angles equal to two right angles.  $\theta_1+\theta_2$=sum of two right angles	Two straight lines are in a straight line with one another 
1.15	Theorem	Two straight lines that cut each other  	The vertical angles are equal $\theta_1=\theta_2$ $\theta_3=\theta_4$

PROPOSITION 1.16





Given: a triangle

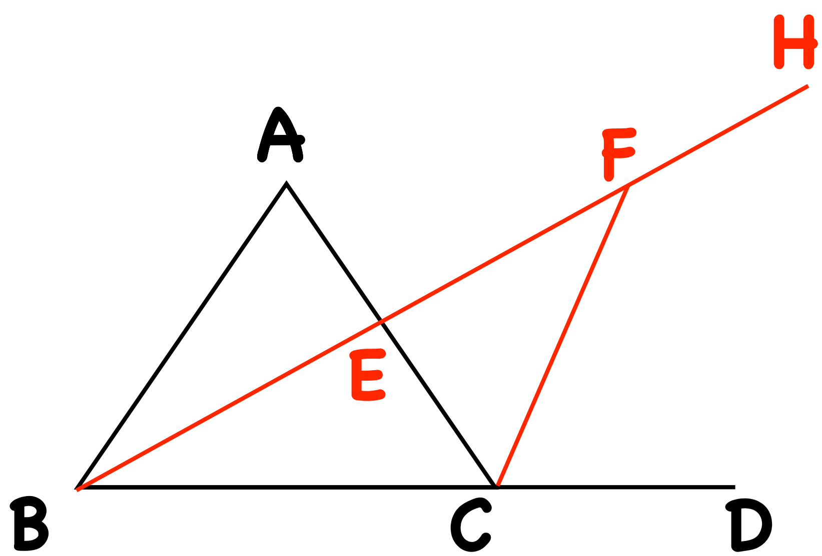
$\triangle ABC$

Prove: exterior angle is greater than either of the interior and opposite angles.

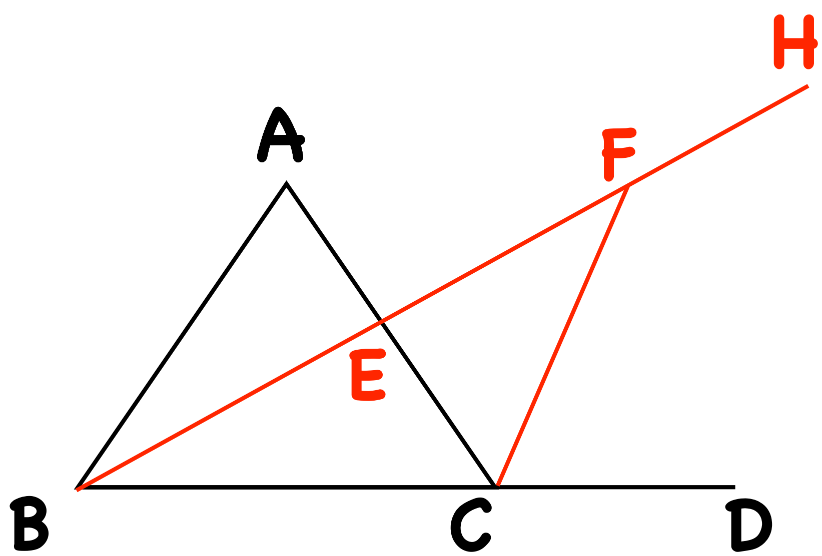
$\measuredangle ACD > \measuredangle ABC$ &

$\measuredangle ACD > \measuredangle BAC$

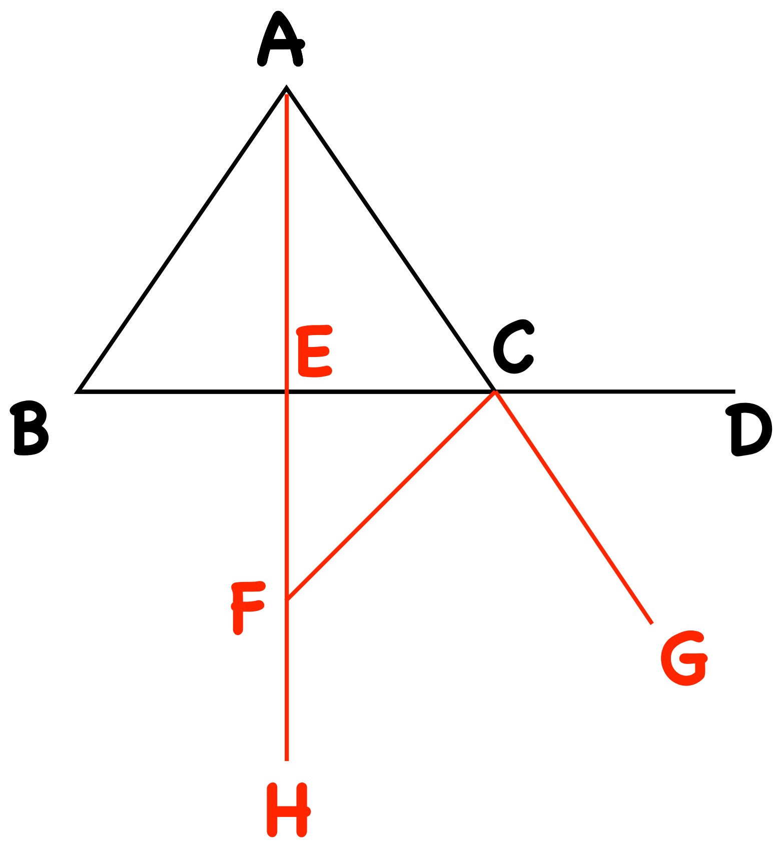
Part 1



1. Bisect AC at E. So that means AE=EC (Prop 1.10).
2. Join points B and E (P1) and extend it to H (P2).
3. Let point F be on EH so that EF=BE (Prop 1.3).
4. Join point F and C (P1).

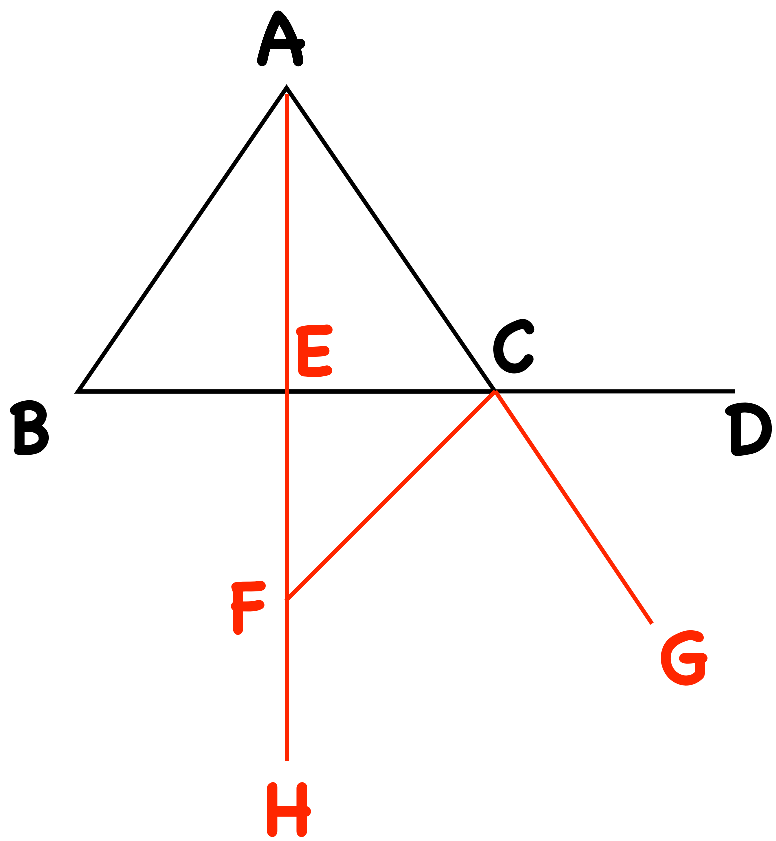


1. AE=EC (because we bisected line AC), BE=EF (because we made it to be so), $\measuredangle$AEB=$\measuredangle$FEC (Prop 1.15)
2. Therefore, $\measuredangle$BAE=$\measuredangle$ECF (Prop 1.4)
3. $\measuredangle$ECD=$\measuredangle$ECF+$\measuredangle$FCD, so $\measuredangle$ECD > $\measuredangle$ECF (A5)
4. $\measuredangle$ACD > $\measuredangle$ECF and $\measuredangle$ACD > $\measuredangle$BAC



Part 2

1. Bisect BC at E. So that means BE=EC (Prop 1.10).
2. Join points A and E (P1) and extend it to H (P2).
3. Let point F be on EH so that EF=AE (Prop 1.3).
4. Join point F and C (P1).
5. Extend line AC to G (P2).



1. BE=EC (because we bisected line BC),

   AE=EF (because we made it to be so),

   $\measuredangle$AEB=$\measuredangle$FEC (Prop 1.15)

2. Therefore, $\measuredangle$ABC=$\measuredangle$ECF (Prop 1.4)

3. $\measuredangle$ECG=$\measuredangle$ECF+$\measuredangle$FCG, so

   $\measuredangle$ECG > $\measuredangle$ECF (A5)

4. $\measuredangle$ACD > $\measuredangle$ECF and

   $\measuredangle$ACD > $\measuredangle$ABC (Prop 1.15)

QUIZ ON THURSDAY

- PROP 1.16
- EXTRA CREDIT: PROP 1.15