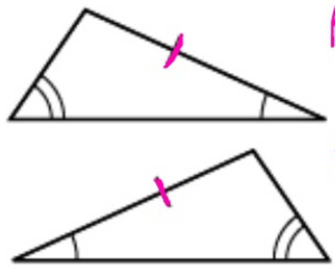
Test prep: p. 153: 11-14

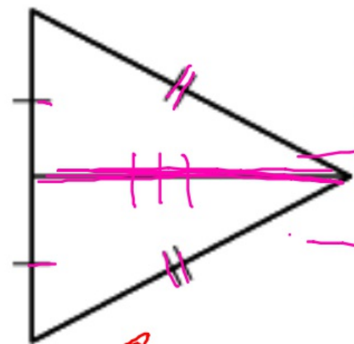
11



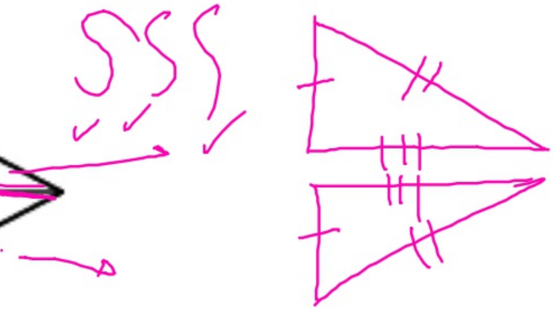
AAS

~~ASA~~

12

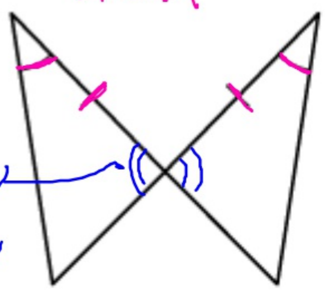


SSS

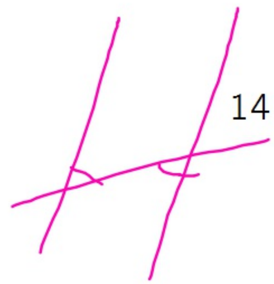


ÁŠÁ

13

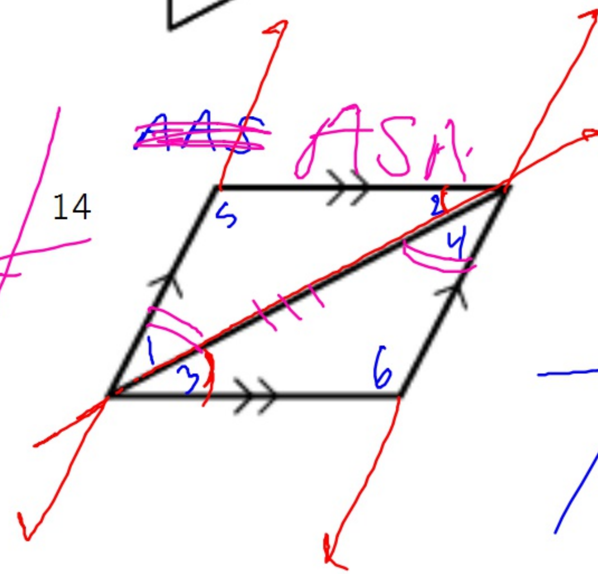


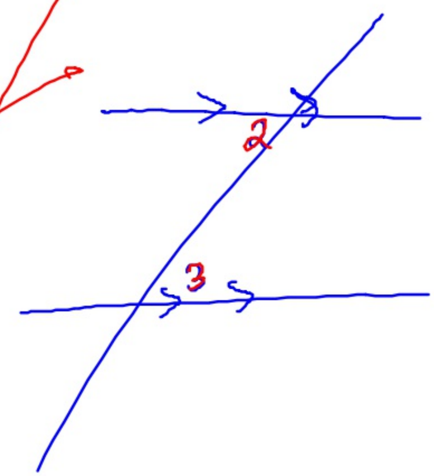
Vertical Angles

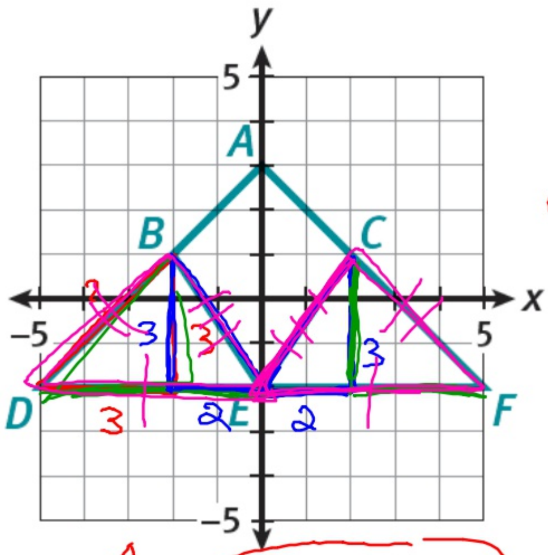


~~AAS~~ ASA

14







BD $\sqrt{18} = 3\sqrt{2} \approx 4.24$

DE 5

BE $\sqrt{13} \approx 3.6$

CF 4.24

FE 5

CE = 3.6

SSS

$a^2+b^2=c^2$

$3^2+3^2=c^2$

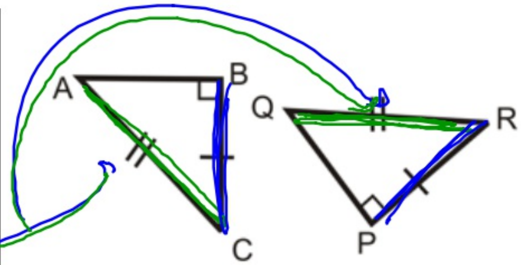
$\sqrt{18}=\sqrt{c^2}$

$\approx 4.24 = c$

Get out your foldable please

A pair of hypotenuses and a pair of legs in 2 right triangles

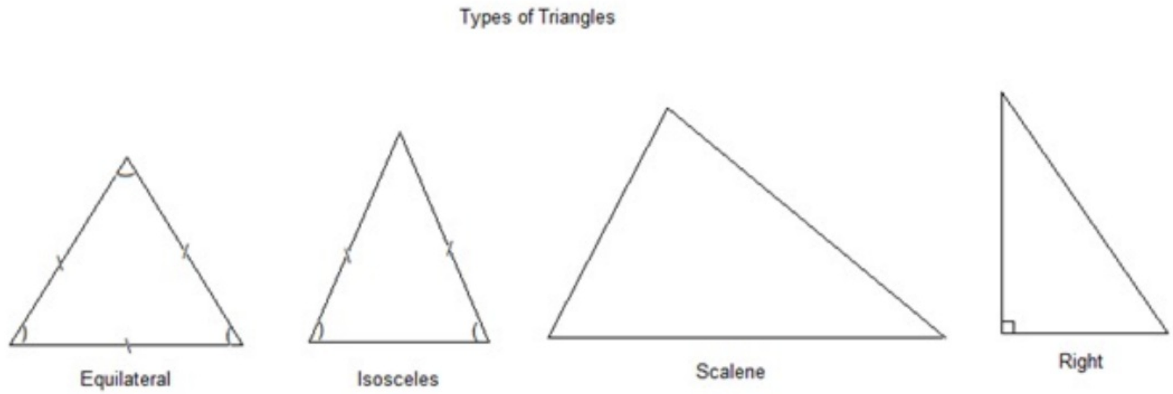
HL guarantees congruence (Right Triangles Only)



Pythagorean theorem:

- Hypotenuse: the side across from 90° in a rt. △.
- Leg: a non-hypotenuse side

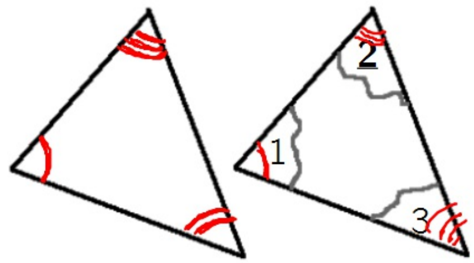
<u>Why</u> do all triangles' angles add up to 180°?



- TRIANGLE ANGLE SUM THEOREM
-
-

- Blank paper
- Const. paper
- Scissors
- glue
- ruler

1. On construction paper, use a ruler and draw, then cut out a triangle. Place the scraps in the recycling bin.
2. Mark the angles with little stripes to show their vertices.
3. Label the three angles of the triangle 1, 2, and 3 (doesn't matter which goes where). Put the number close to the vertex of the angle.

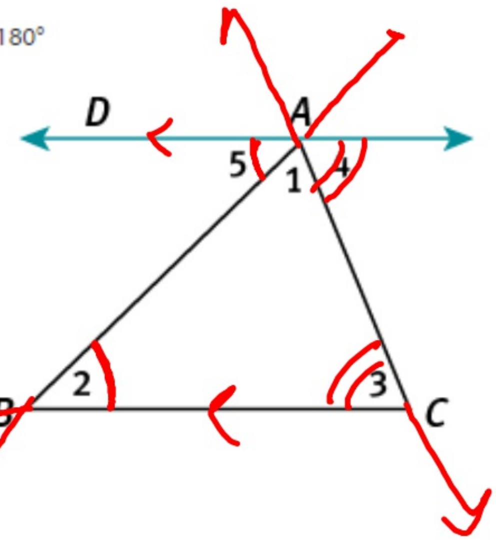


3. Carefully tear the angles/corners off the triangle, being sure the number is visible on the torn sections.
4. Arrange the 3 pieces together. What do you notice?

Formal proof: p. 182 #6

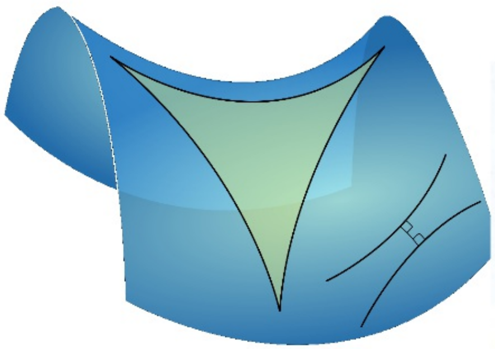
Given: $\triangle ABC$

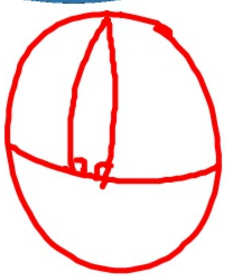
Prove: $m\angle 2 + m\angle 1 + m\angle 3 = 180°$



Statements	Reasons
1. Through point *A*, draw $\overleftrightarrow{AD}$, so that $\overleftrightarrow{AD} \parallel \overleftrightarrow{BC}$.	**1.** Parallel Postulate
2. $m\angle 5 + m\angle 1 + m\angle 4 = 180°$	**2.** Supplementary Angles
3. $\angle 2 \cong \angle 5$, $\angle 3 \cong \angle 4$	**3.** If parallel lines are cut by a transversal, then alternate interior angles are congruent.
4. $m\angle 2 = m\angle 5$, $m\angle 3 = m\angle 4$	**4.** Definition of congruent angles
5. $m\angle 2 + \angle 1 + m\angle 3 = 180$	**5.** Substitution Property

Do triangles ever NOT total 180°? YES, but only if you assume parallel lines can cross (?!?!)





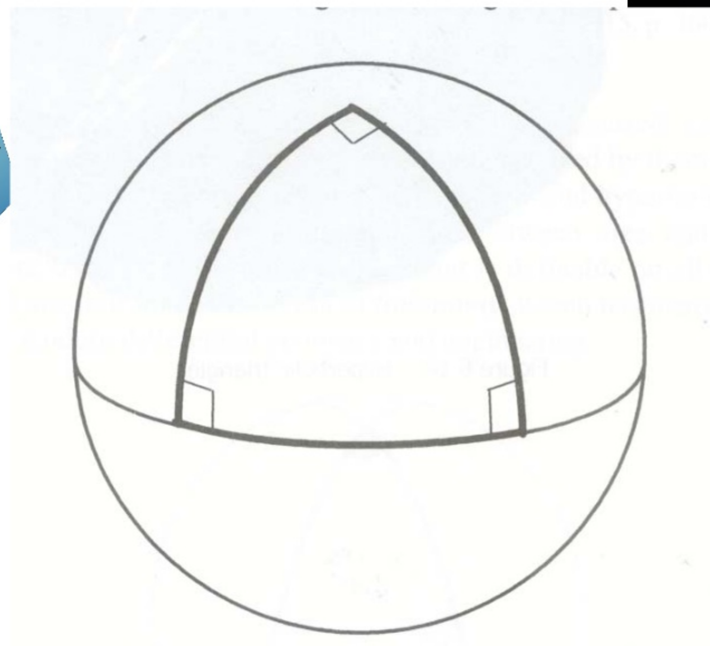
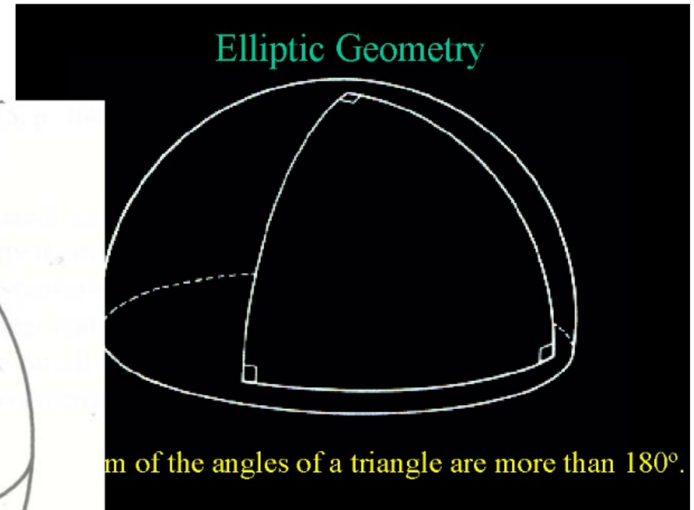


Figure 6.13 Triple-right triangle on a sphere



Homework: Finish worksheet handed out Monday (12 proof problems)