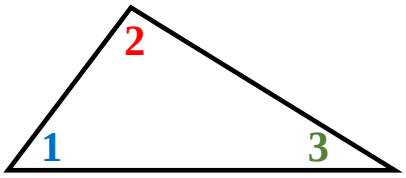
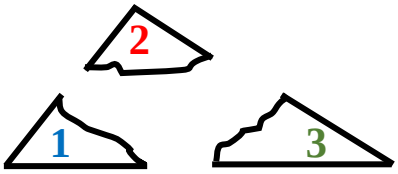
Prove that the interior angles of a triangle sum to 180°.



Alex's "Corner Tearing" Method

I ripped the corners off the triangle.

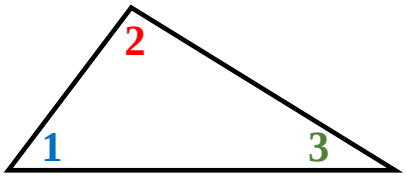


Then, I moved the pieces and saw that the angles create a straight line.

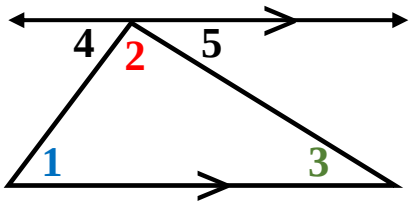
I already know a line is 180°, so the three angles of a triangle must add up to 180°.

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

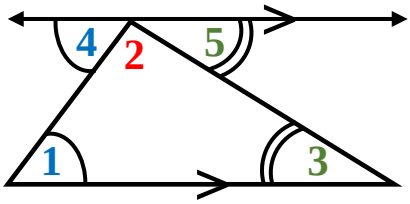
Prove that the interior angles of a triangle sum to 180°.



Morgan's "Parallel Line" Method



I drew a line parallel to the bottom of the triangle, making ∠4 and ∠5.



Because the lines are parallel, $m\angle 1 = m\angle 4$ and $m\angle 3 = m\angle 5$.

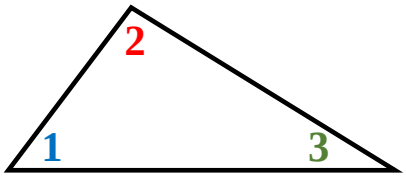
$m\angle 4 + m\angle 2 + m\angle 5 = 180°$

Angles 4, 2, and 5 make a straight line, and add to 180°.

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

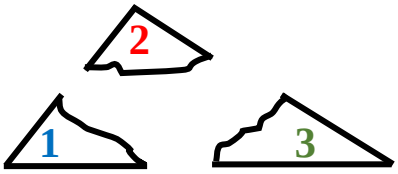
Using substitution angles 1, 2, and 3 add to 180°.

Prove that the interior angles of a triangle sum to 180°.



Alex's "Corner Tearing" Method	Morgan's "Parallel Line" Method

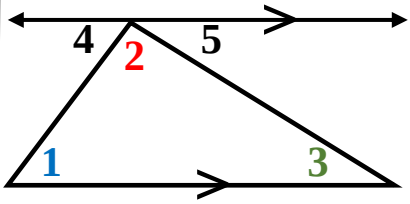
I ripped the corners off the triangle.



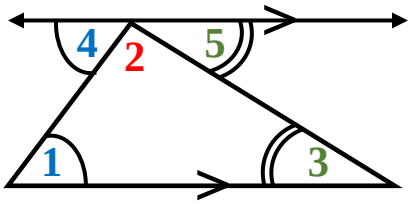
Then, I moved the pieces and saw that the angles create a straight line.

I already know a line is 180°, so the three angles of a triangle must add up to 180°.

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



I drew a line parallel to the bottom of the triangle, making ∠4 and ∠5.



Because the lines are parallel, $m\angle 1 = m\angle 4$ and $m\angle 3 = m\angle 5$.

$m\angle 4 + m\angle 2 + m\angle 5 = 180°$

Angles 4, 2, and 5 make a straight line, and add to 180°.

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

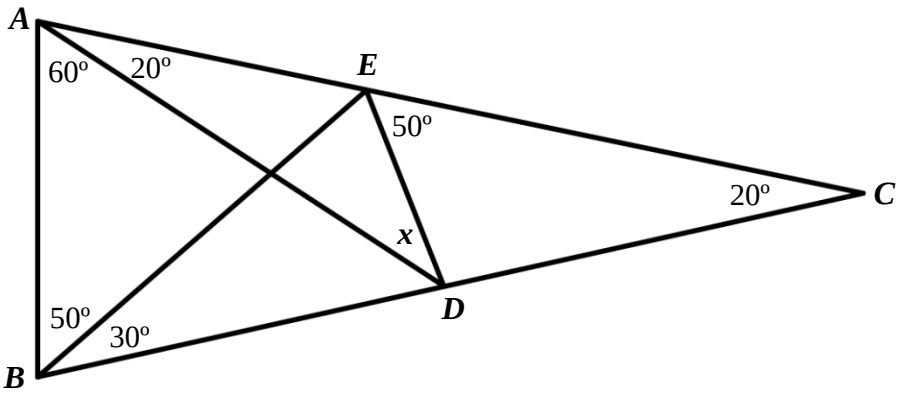
Using substitution angles 1, 2, and 3 add to 180°.

A.5: *Triangle Angle Sum Theorem*

1) What are the similarities and differences between Alex and Morgan's methods?

Similarities	Differences

2) Find the measure of angle x.



3) a) In Morgan's second step, why does she know that the $m\angle 1 = m\angle 4$ and $m\angle 3 = m\angle 5$?

b) Why was she able to use substitution in the fourth step?

4) What would Alex get if he tried his method on a quadrilateral?

Prove that the interior a

Alex's "Corner T

I ripped the corners off th triangle.

Then, I moved the pieces and saw that the angles create a straight line.

I already know a line is 180°, so the three angles of a triangle must add up to 180°.

Wow! By looking at my method and Morgan's, I learned that the sum of the interior angles of a triangle will always add to 180°.

nes el, ∠4 and 3 = m∠5.

gles 4, 2, and 5 ake a straight line, and add to 180°.

Using substitution angles 1, 2, and 3 add to 180°.

+ m∠3 = 180°

m∠3 = 180°