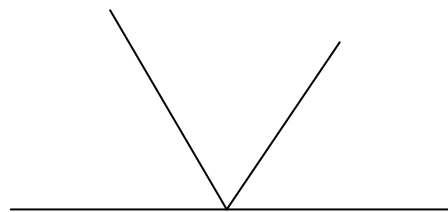
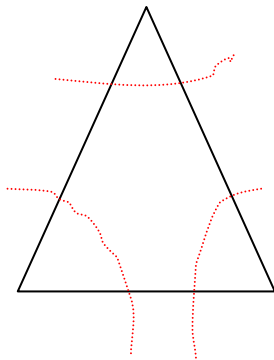


## The sum of angles in a triangle

The sum of the angles in a triangle is  $180^\circ$ . One way to see this is by cutting the corners off of the triangle and noticing that the three angles form a straight angle (or  $180^\circ$ ).



What if we draw a triangle on a sphere? Would the sum of the angles still be  $180^\circ$ ?

The diagram on the right shows a triangle formed by the equator and two lines of longitude. Consider the following:



- What are the angles formed at the equator?
- What is the third angle (approximately)?
- What is the sum of these angles?

Now draw a different triangle using the equator and two different lines of longitude. What is the sum of the angles?

Try this again with two different lines of longitude.

- Is the sum constant?
- Or, does the sum change?
  - If it changes, what is the smallest possible sum and what is the largest possible sum?