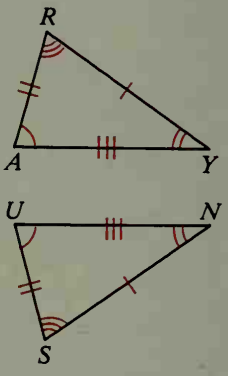
Do you see that the following statements are true?

(1) Since congruent triangles have the same shape, their corresponding angles are congruent.
(2) Since congruent triangles have the same size, their corresponding sides are congruent.

We have the following definition for *congruent triangles.*

Two triangles are **congruent** if and only if their vertices can be matched up so that the *corresponding parts* (angles and sides) of the triangles are congruent.



The congruent parts of the triangles shown are marked alike. Imagine sliding $\triangle SUN$ up until $\overline{UN}$ falls on $\overline{AY}$ and then flipping $\triangle SUN$ over so that point S falls on point R. The vertices are matched like this:

$$S \longleftrightarrow R \qquad U \longleftrightarrow A \qquad N \longleftrightarrow Y$$

$\triangle SUN$ fits over $\triangle RAY$. The corresponding parts are congruent, and the triangles are congruent.

When referring to congruent triangles, we name their corresponding vertices in the same order. For the triangles shown,

$\triangle SUN$ is congruent to $\triangle RAY$.
$\triangle SUN \cong \triangle RAY$

The following statements about these triangles are also correct, since corresponding vertices of the triangles are named in the same order.

$$\triangle NUS \cong \triangle YAR \qquad \triangle SNU \cong \triangle RYA$$

Suppose you are given that $\triangle XYZ \cong \triangle ABC$. From the definition of congruent triangles you know, for example, that

$$\overline{XY} \cong \overline{AB} \quad \text{and} \quad \angle X \cong \angle A.$$

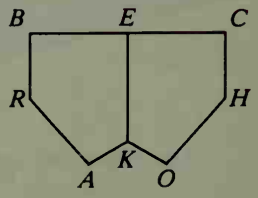
When the definition of congruent triangles is used to justify either of these statements, the wording commonly used is

Corresponding parts of congruent triangles are congruent,

which is often written:

Corr. parts of $\cong$ $\triangle$ are $\cong$.

Two *polygons* are **congruent** if and only if their vertices can be matched up so that their corresponding parts are congruent. Just as for triangles, there are many ways to list the congruence between the two pentagons at the right so that corresponding vertices are written in the same order.



BRAKE $\cong$ *CHOKE*

Notice that side $\overline{KE}$ of pentagon *BRAKE* corresponds to side $\overline{KE}$ of pentagon *CHOKE*. $\overline{KE}$ is called a *common side* of the two pentagons.