

# Definition of Congruence

## Congruence - Congruent

You walk into your favorite mall and see dozens of copies of your favorite CD on sale. All of the CDs are exactly the same size and shape. In fact, you can probably think of many objects that are mass produced to be exactly the same size and shape.

**Objects that are exactly the same size and shape are said to be congruent.**

- ◇ In plain English, these objects are exactly the same, they are duplicates of one another.
- ◇ In Mathematics, if two figures are congruent and you cut one figure out with a pair of scissors, it would fit perfectly on top of the other figure.

Mathematicians use the word congruent to describe geometrical figures.

- ◇ If two quadrilaterals (4 sided) are the same size and shape, they are congruent.
- ◇ If two pentagons (5 sided) are the same size and shape they are congruent.
- ◇ If two polygons (any number of sides) are the same size and shape, they are congruent.
- ◇ If two line segments are the same size (they already are the same shape), they are congruent.

## Congruent Symbol

The mathematical symbol used to denote congruent is  $\cong$   
The symbol is made up of two parts:

$\sim$  which means the same shape (similar)

and

$=$  which means the same size (equal).

When you are looking at congruent figures, be sure to find the sides and the angles that "match up" (are in the same place) in each figure. Sides and angles that "match up" are called corresponding sides and corresponding angles.

In congruent figures, these corresponding parts are also congruent. This means that the corresponding sides will be equal in measure (length) and that the corresponding angles will be equal in degrees.