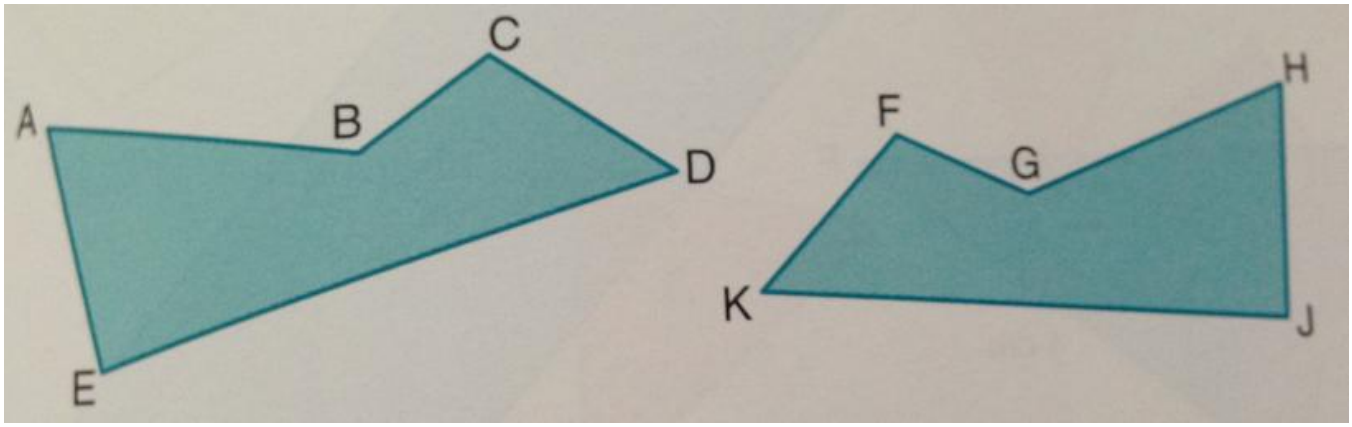
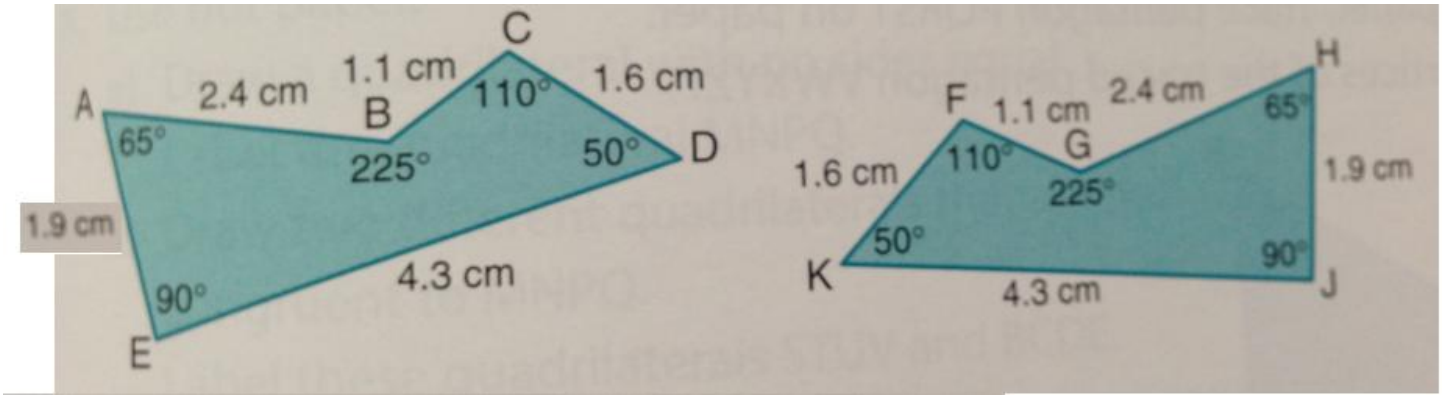
Anchor Chart for Congruent and Similar Figures

Congruent Figures

Congruent figures have the same size and shape, but not necessarily the same orientation.



To find out if figures are congruent, measure and record the lengths of all the sides and all the angles.



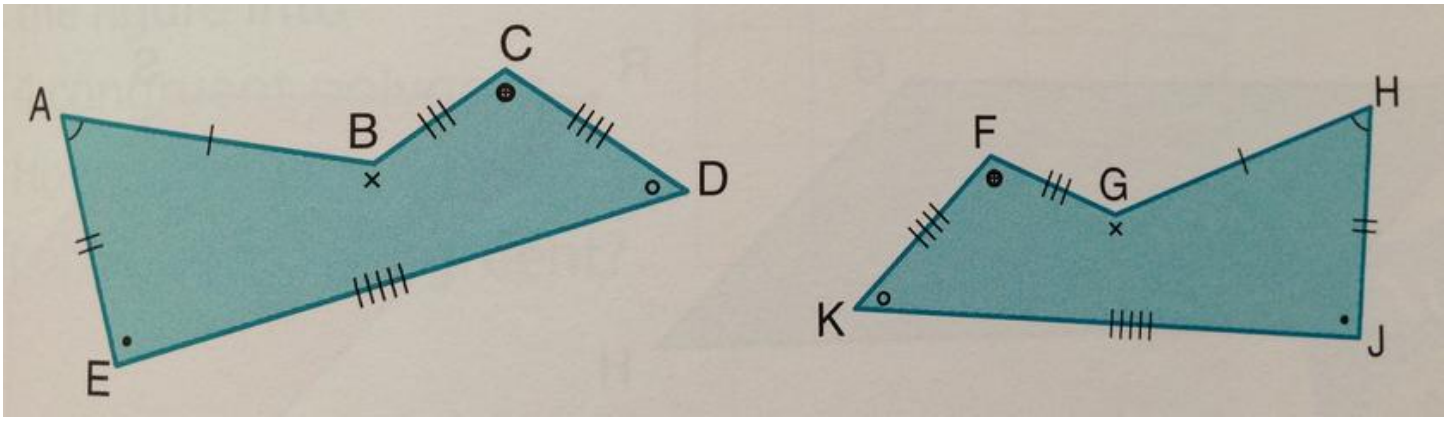
Compare the measures of corresponding sides and of corresponding angles.

Corresponding sides have the same relative position in a polygon.

Corresponding angles have the same relative position in a polygon.

When all corresponding sides and corresponding angles are equal, figures are congruent.

We **use hatch marks and symbols** to show which sides and angles are equal.



These pairs of sides have the same length:

$AB = HG,\ BC = GF,\ CD = FK,\ DE = KJ,\ EA = JH$

These pairs of angles have the same measure:

$\angle A = \angle H,\ \angle B = \angle G,\ \angle C = \angle F,\ \angle D = \angle K,\ \angle E = \angle J$

We say "pentagon ABCDE is congruent to pentagon HGFKJ."

We write **ABCDE ≅ HGFKJ**

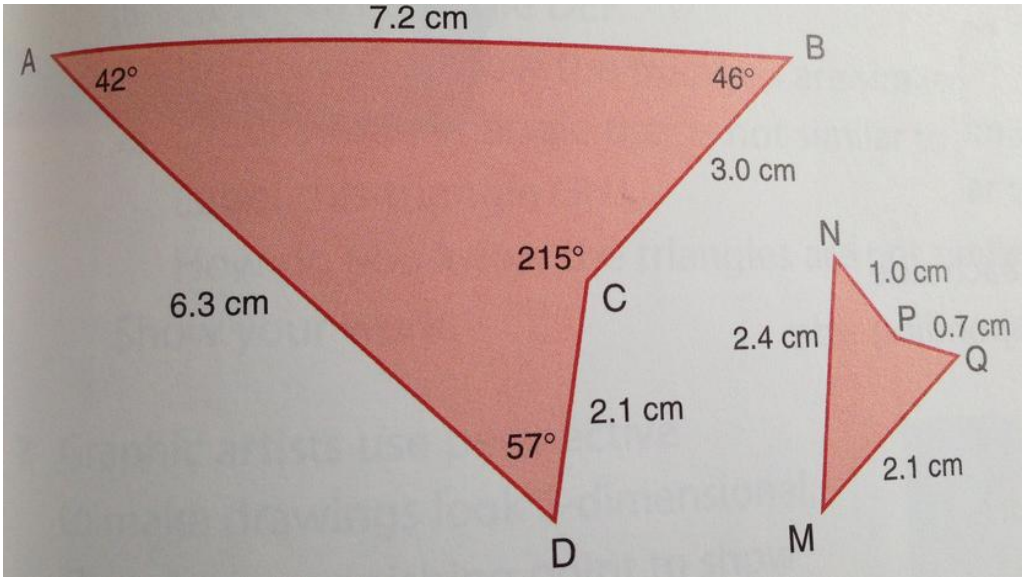
The symbol ≅ means "is congruent to."

Similar Figures

Similar figures have the same shape, though they may not be the same size.

Two figures are similar if their **corresponding angles are equal** and **the side lengths of one figure can multiplied by the same number to equal the corresponding side lengths of the other figure.**

These figures are similar.



Each side of quadrilateral ABCD is 3 times the length of the corresponding side of quadrilateral MNPQ.

$3 \times MN = AB$	$3 \times 2.4\text{ cm} = 7.2\text{ cm}$
$3 \times NP = BC$	$3 \times 1.0\text{ cm} = 3.0\text{ cm}$
$3 \times PQ = CD$	$3 \times 0.7\text{ cm} = 2.1\text{ cm}$
$3 \times QM = DA$	$3 \times 2.1\text{ cm} = 6.3\text{ cm}$

Each angle in quadrilateral ABCD is equal to the corresponding angle in quadrilateral MNPQ.

$\angle A = \angle M = 42°$

$\angle B = \angle N = 46°$

$\angle C = \angle P = 215°$

$\angle D = \angle Q = 57°$

We say "ABCD is similar to MNPQ."

We write ABCD ~ MNPQ

The symbol ~ means "is similar to."