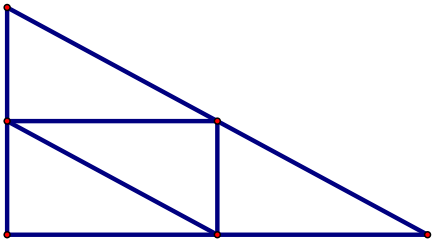
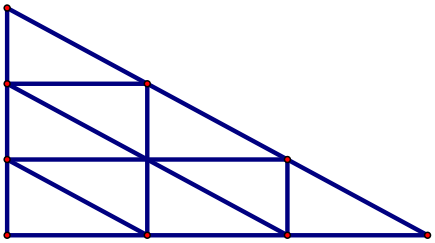
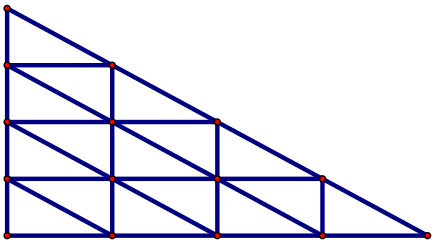
Congruency - Lesson 3-1

Here's the warmup!

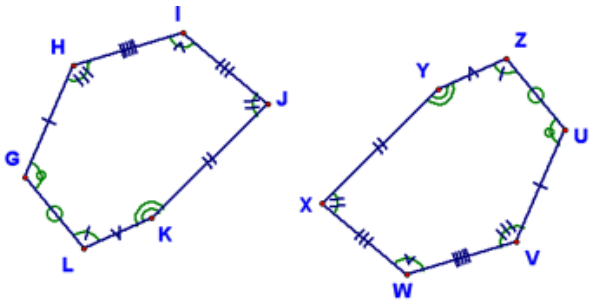
Find the number of triangles in each diagram.







Today, we're going to talk about the congruency of polygons and triangles. Let's start by defining congruent polygons:



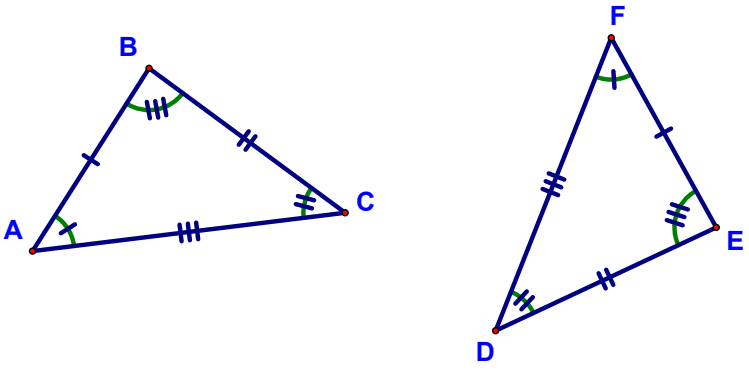
GHIJKL ≅ UVWXYZ

Polygons that are the exact same size and shape are *congruent polygons*. In order for this to happen, all pairs of corresponding parts (corresponding angles and corresponding sides) must be congruent.

Now let's show how this pertained to triangles....remember, you need to write the congruency statements in the correct way!! Saying △ACB is congruent to △DFE is very different (and incorrect) to what you should conclude below!

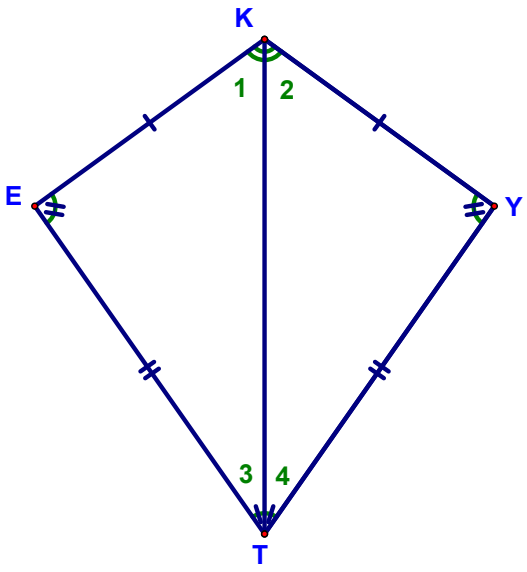
Two triangles are *congruent* if and only if all pairs of corresponding parts are congruent.

So, △ACB ≅ △



From the congruency statement, you should be able to see that ∠A corresponds to ∠F and that side $\overline{AB}$ corresponds to side $\overline{FE}$, etc.

Here's another example that helps us to understand that we'll be using the "Reflexive Property" a lot for the rest of the year! Make sure to get the congruency statement correct!



△KET ≅ △

Note that $\overline{KT}$ is in both triangles here. Whenever a side or angle is shared by two figures, we say that the side or angle is *congruent to itself*.

Any segment or angle is congruent to itself (*Reflexive Property*).