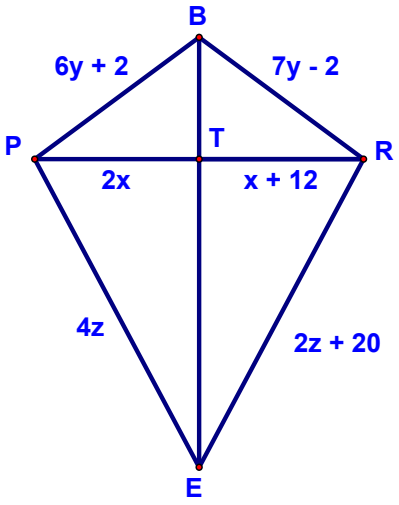
Introduction to Parallel Lines - Lesson 4.5

Here is our warmup!

All measurements shown on the diagram are for the associated segment length. Find x, y, z, and the perimeter of PBRE

m∠PTB = 5x + 30

m∠BTR = 7x + 6



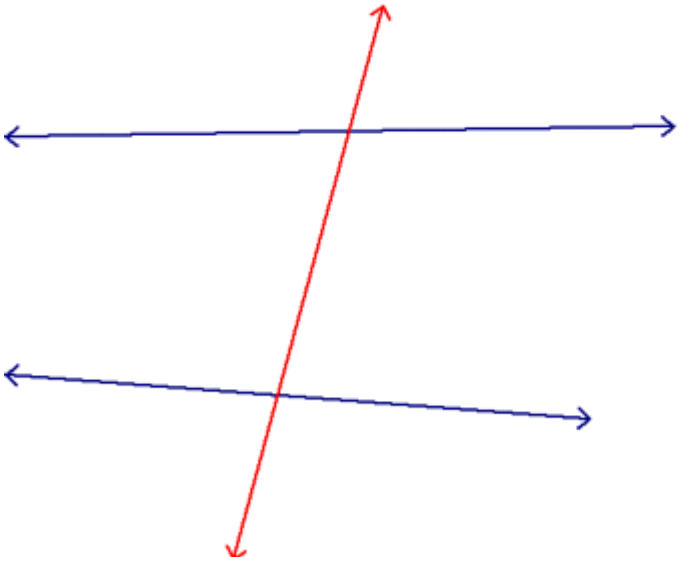
Let's start today by defining the following:

A *plane* is a surface such that if any two points on the surface are connected by a line, all points of the line are also on the surface.

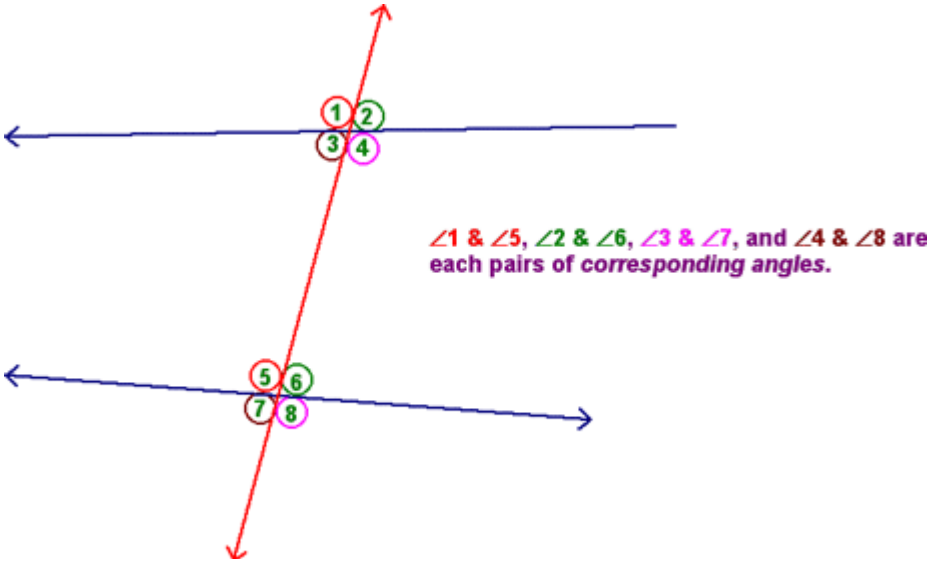
If points, lines, segments, and so forth, lie in the same plane, we call the *coplanar*. Points, lines, segments, and so forth, that do not lie in the same plane are called *noncoplanar*.

Now, we'll define a *transversal,*

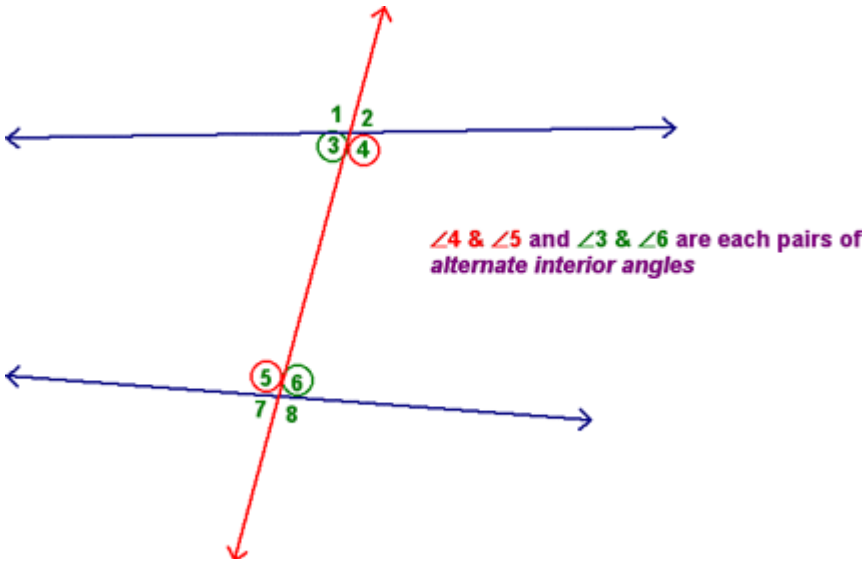
A line passing through two or more other lines in a plane is called a *transversal*.



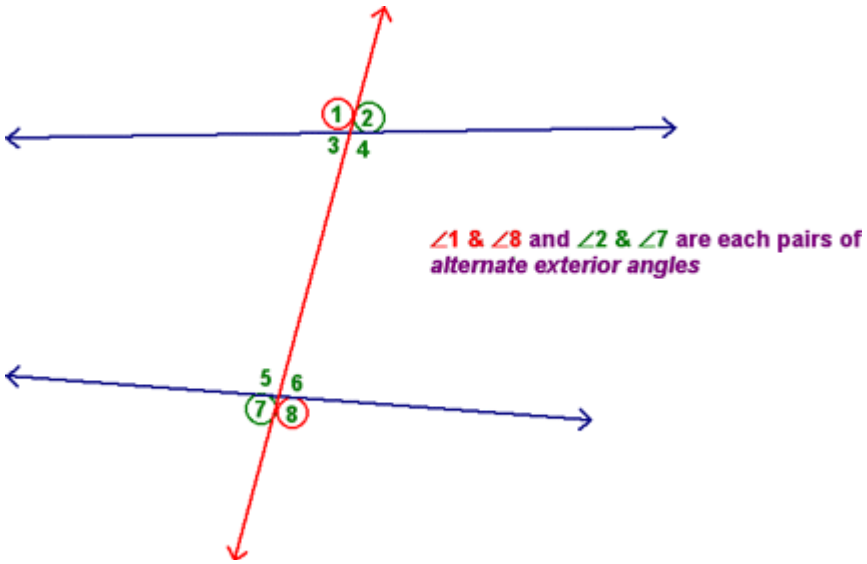
Corresponding angles,



Alternate interior angles,

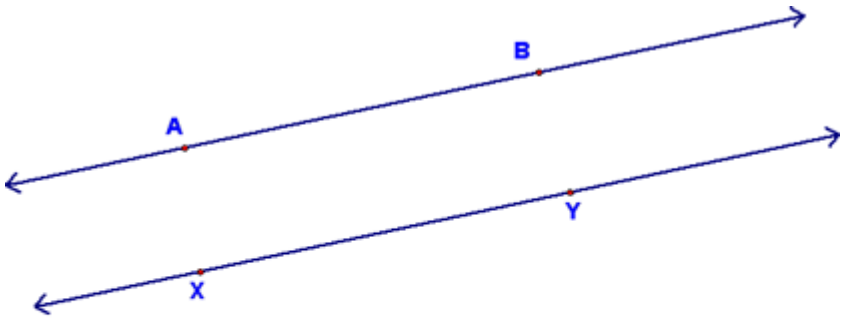


And alternate exterior angles.



You should also know how to recognize *same side interior angles* and *same side exterior angles*.

Let's finish by defining parallel lines. Note that parallel lines are different from skew lines, which are to non-coplanar lines that do not intersect.



Parallel lines **are two coplanar lines that do not intersect.**
In the figure above, $\overleftrightarrow{AB} \parallel \overleftrightarrow{XY}$.