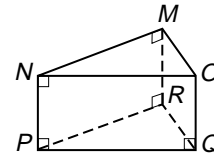


Study Guide

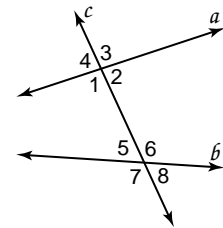
Parallel Lines and Transversals

When planes do not intersect, they are said to be **parallel**. Also, when lines in the same plane do not intersect, they are parallel. But when lines are not in the same plane and do not intersect, they are **skew**. A line that intersects two or more lines in a plane at different points is called a **transversal**. Eight angles are formed by a transversal and two lines. These angles and pairs of them have special names.

Example: Planes PQR and NOM are parallel.
 Segments MO and RQ are parallel.
 Segments MN and RQ are skew.



Example: Interior angles: $\angle 1, \angle 2, \angle 5, \angle 6$
 Alternate interior angles: $\angle 1$ and $\angle 6, \angle 2$ and $\angle 5$
 Consecutive interior angles: $\angle 1$ and $\angle 5, \angle 2$ and $\angle 6$
 Exterior angles: $\angle 3, \angle 4, \angle 7, \angle 8$
 Alternate exterior angles: $\angle 3$ and $\angle 7, \angle 4$ and $\angle 8$
 Corresponding angles: $\angle 1$ and $\angle 7,$
 $\angle 2$ and $\angle 8, \angle 3$ and $\angle 6, \angle 4$ and $\angle 5$



Refer to the figure in the first example.

1. Name two more pairs of parallel segments.
2. Name two more segments skew to \overline{NM} .
3. Name two transversals for parallel lines \overline{NO} and \overline{PQ} .
4. Name a segment that is parallel to plane MRQ .

Identify the special name for each pair of angles in the figure.

5. $\angle 2$ and $\angle 6$
 6. $\angle 4$ and $\angle 8$
 7. $\angle 4$ and $\angle 5$
 8. $\angle 2$ and $\angle 5$
9. Draw a diagram to illustrate two parallel planes with a line intersecting the planes.

