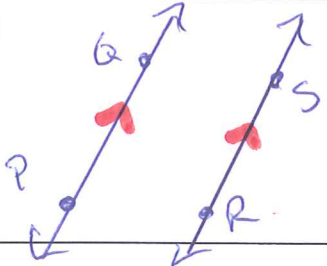
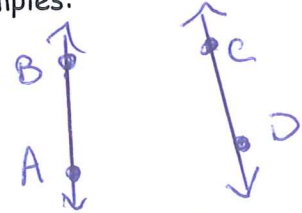


3-1 Parallel Lines and Transversals

Objectives:

- Students will identify the relationships between two lines or two planes
- Students will name angles formed by a pair of lines and transversal.

Relationships between lines and planes:

<p>Definition:</p> <p><u>Coplanar</u> lines that do not intersect are called PARALLEL LINES.</p>	<p>Symbol: $\overleftrightarrow{PQ} \parallel \overleftrightarrow{RS}$</p> <p>The symbol \parallel means is parallel to.</p> <p>The symbol \nparallel means not parallel to. (Intersects)</p> <p>$\overleftrightarrow{AB} \nparallel \overleftrightarrow{CD}$</p>
<p>Examples:</p> <p>$\overleftrightarrow{PQ} \parallel \overleftrightarrow{RS}$</p> 	<p>Non Examples:</p> <p>$\overleftrightarrow{AB} \nparallel \overleftrightarrow{CD}$</p> 

Similarly, in three dimensions, two planes that do not intersect are called parallel planes.
 Lines that do not intersect and are not coplanar are called skew lines.

Example 1: Identify Relationships

1.) Name the planes that are parallel to plane PRE

Plane CTM

2.) Name all the segments that intersect \overline{CT} .

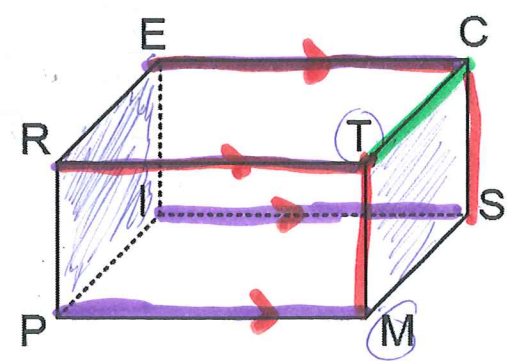
\overline{TM} , \overline{SC} , \overline{EC} , and \overline{RT}

3.) Name all the segments that are parallel to \overline{IS} .

\overline{PM} , \overline{EC} , and \overline{RT}

4.) Name all the segments that are skew to \overline{TM} .

\overline{RE} , \overline{EC} , \overline{FS} , and \overline{PI}



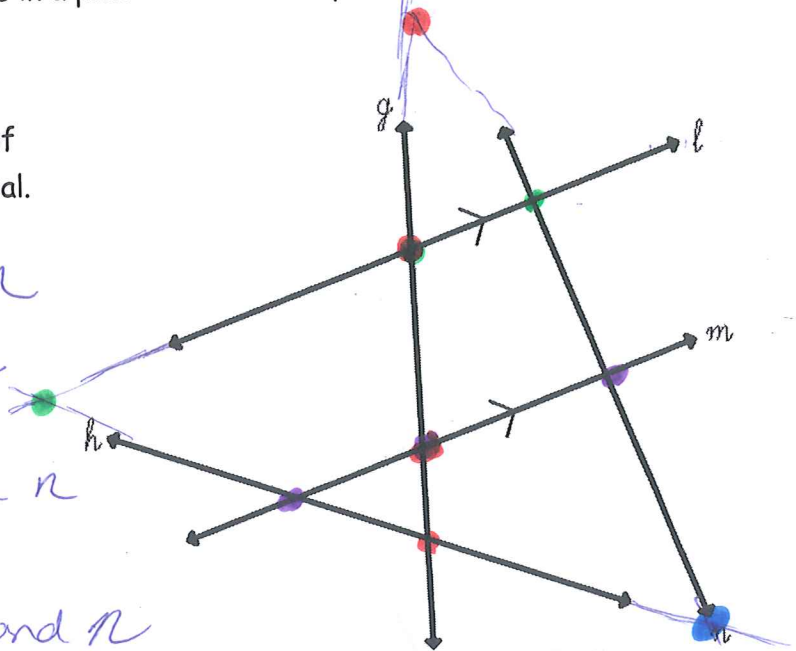
Angle Relationships

A line that intersects two or more lines in a plane at different points is called a transversal.

Example 2: Identifying Transversals

Use the figure below to identify the sets of lines to which each given line is a transversal.

- Line l lines g , h , and n
- Line m lines g , h , and n
- Line g lines l , m , h , and n
- Line h lines l , m , g , and n



Key Concepts		Transversals and Angles
Name	Angles	Transversal l intersects lines m and n .
Exterior Angles	$\angle 1, \angle 2, \angle 7, \angle 8$	
Interior Angles	$\angle 3, \angle 4, \angle 5, \angle 6$	
Consecutive Interior Angles	$\angle 4$ and $\angle 6$ $\angle 3$ and $\angle 5$	
Alternate Exterior Angles	$\angle 1$ and $\angle 8$ $\angle 2$ and $\angle 7$	
Alternate Interior Angles	$\angle 3$ and $\angle 6$ $\angle 4$ and $\angle 5$	
Corresponding Angles	$\angle 1$ and $\angle 5$ $\angle 2$ and $\angle 6$ $\angle 3$ and $\angle 7$ $\angle 4$ and $\angle 8$	

Example 3: Identify Angle Relationships:

Use the figure to identify the type of each pair of angles.

a.) $\angle 1$ and $\angle 4$

AIA

c.) $\angle 2$ and $\angle 3$

AEA

b.) $\angle 1$ and $\angle 3$

Corresponding \angle 's

d.) $\angle 4$ and $\angle 6$

CIA Consecutive Interior \angle 's

