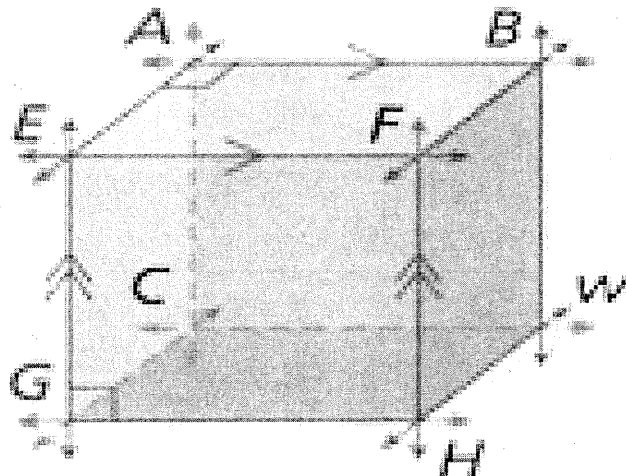


I. Parallel Lines vs. Perpendicular Lines vs. Skew Lines

Type/Definition	Symbol	Example
<p>Parallel Lines</p> <ul style="list-style-type: none"> • Lines that are coplanar • DO NOT intersect • Equidistant from one another. 	<p>//</p> <p>* arrows are used to show that lines are parallel.</p>	<p>$\overleftrightarrow{AB} \parallel \overleftrightarrow{EF}$ $\overleftrightarrow{EG} \parallel \overleftrightarrow{FH}$</p>
<p>Perpendicular Lines</p> <ul style="list-style-type: none"> • intersect at 90° angles 	<p>⊥</p>	<p>$\overleftrightarrow{AB} \perp \overleftrightarrow{AE}$ $\overleftrightarrow{EG} \perp \overleftrightarrow{GH}$</p>
<p>Skew Lines</p> <ul style="list-style-type: none"> • <u>not</u> coplanar • <u>not</u> parallel • DO NOT intersect 	<p>no symbol!</p>	<p>\overleftrightarrow{AB} and \overleftrightarrow{EG} are skew lines!</p>
<p>Parallel Planes</p>	<p>Planes that DO NOT intersect! plane ABE // plane CWG</p>	

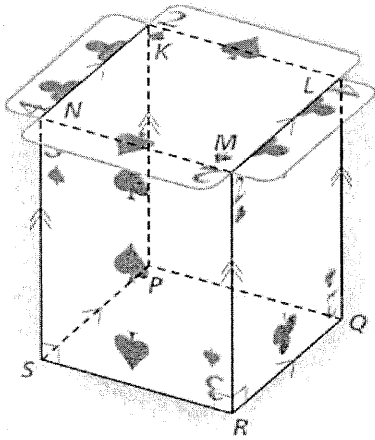
NOTE: Segments or rays are parallel, perpendicular, or skew if the lines that contain them are parallel, perpendicular, or skew.



Would $\overleftrightarrow{EF} \parallel \overleftrightarrow{CW}$
BE PARALLEL?
→ DONT LIE IN
THE SAME
PLANE!
NO

Example 1: Identify the following...

* answers will vary!



1. a pair of parallel segments

2. a pair of skew segments

3. a pair of perpendicular segments

4. a pair of parallel planes

EX: $\overline{KN} \parallel \overline{PS}$ $\overline{NS} \parallel \overline{MR}$
 $\overline{LM} \parallel \overline{QR}$ and $\overline{NS} \parallel \overline{KP}$

EX $\overline{LM} \perp \overline{RS}$ and $\overline{QR} \perp \overline{KP}$

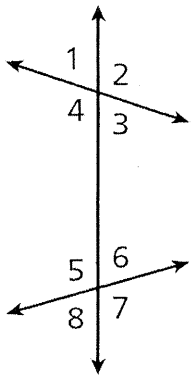
EX $\overline{MR} \perp \overline{RS}$ and $\overline{KP} \perp \overline{PS}$

EX $\overline{PQR} \parallel \overline{KLM}$ and $\overline{KPS} \parallel \overline{LQR}$

II. Angle Pairs formed by a Transversal

Term	Example
<p>Transversal</p> <ul style="list-style-type: none"> a line that intersects two coplanar lines at two different points. transversal \div two other lines form 8 \angles 	
<p>Corresponding Angles</p> <ul style="list-style-type: none"> same side of the transversal same position 	$\angle 1 \div 5$ $\angle 2 \div 6$ $\angle 3 \div 7$ $\angle 4 \div 8$
<p>Alternate Interior Angles</p> <ul style="list-style-type: none"> nonadjacent angles lie on opposite sides of the transversal interior of the lines 	$\angle 3 \div 6$ $\angle 4 \div 5$
<p>Alternate Exterior Angles</p> <ul style="list-style-type: none"> lie on opposite sides of the transversal outside of the lines 	$\angle 1 \div 8$ $\angle 2 \div 7$
<p>Same - Side Interior</p> <ul style="list-style-type: none"> consecutive interior angles lie on the same side of the transversal between the lines 	$\angle 3 \div 5$ $\angle 4 \div 6$

Example 2: Give an example of each angle pair...

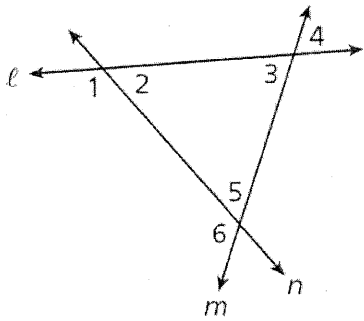


1. a pair of corresponding angles
2. a pair of alternate interior angles
3. a pair of alternate exterior angles
4. a pair of same-side interior angles

$\angle 1 \hat{=} \angle 5$ $\angle 2 \hat{=} \angle 6$
 $\angle 4 \hat{=} \angle 8$ and $\angle 3 \hat{=} \angle 7$
 $\angle 4 \hat{=} \angle 6$ and $\angle 3 \hat{=} \angle 5$
 $\angle 1 \hat{=} \angle 7$ and $\angle 2 \hat{=} \angle 8$
 $\angle 4 \hat{=} \angle 5$ and $\angle 3 \hat{=} \angle 6$

NOTE: To determine which line is the transversal for a given angle pair, locate the line that connects the vertices.

Example 3: Identify the transversal and classify each angle pair.



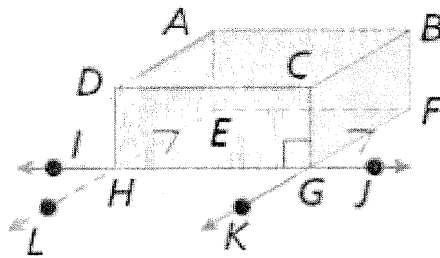
1. $\angle 1$ and $\angle 3$ transversal: l Corresponding \angle s
2. $\angle 2$ and $\angle 6$ transversal: n alt. int. \angle s
3. $\angle 4$ and $\angle 6$ transversal: m alt-ext. \angle s

IN PAIRS - COMPLETE THE FOLLOWING:

Use the figure to identify an example of each of the following.

1. a pair of skew segments
 $\overline{AD} \hat{=} \overline{HG}$
2. a pair of parallel segments
 $\overline{DH} \parallel \overline{CG}$
3. a pair of parallel planes
plane $ABC \parallel$ plane EFG
4. a pair of perpendicular segments
 $\overline{CG} \perp \overline{HG}$

Answers will vary



For each given angle pair, identify the transversal and classify the pair.

5. $\angle 1$ and $\angle 2$ same side int / line n
6. $\angle 2$ and $\angle 4$ alt. ext \angle s / line m
7. $\angle 3$ and $\angle 4$ corresponding / line cp
8. $\angle 1$ and $\angle 4$ alt. ext \angle s / line cp

