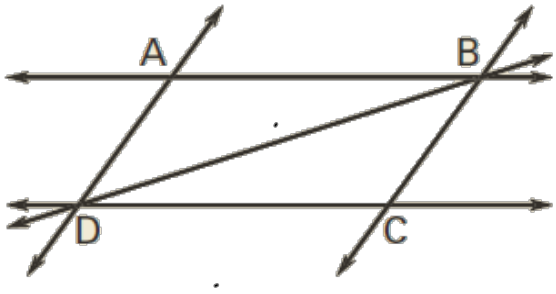
Warm Up

1. Name a line that does not intersect $\overleftrightarrow{AD}$

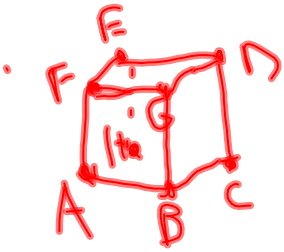
$\overleftrightarrow{BC}$



2. What is the intersection of $\overleftrightarrow{AD}$ and $\overleftrightarrow{DB}$

D

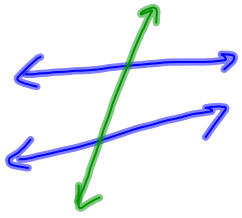
3. Draw a cube and label every vertex.

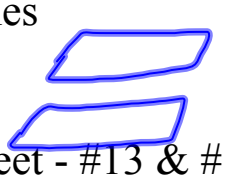


3-1 Pairs of Lines and Angles

parallel lines  2 lines in the same plane that don't intersect

skew lines 2 lines in space that don't intersect and aren't parallel

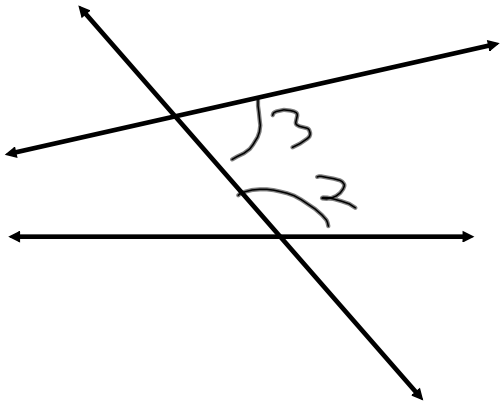
transversal  a line that intersects two other lines

parallel planes  2 planes that don't intersect

postulate sheet - #13 & #14

corresponding angles

∠1 and ∠2



alternate interior angles

∠3 and ∠4

alternate exterior angles

∠5 and ∠6

consecutive interior angles

∠2 and ∠3

Ex 1 Give an example of each, using the cube

parallel lines

$\overleftrightarrow{CM}$ $\overleftrightarrow{UA}$

skew lines

$\overleftrightarrow{TB}$ $\overleftrightarrow{MA}$

perpendicular lines

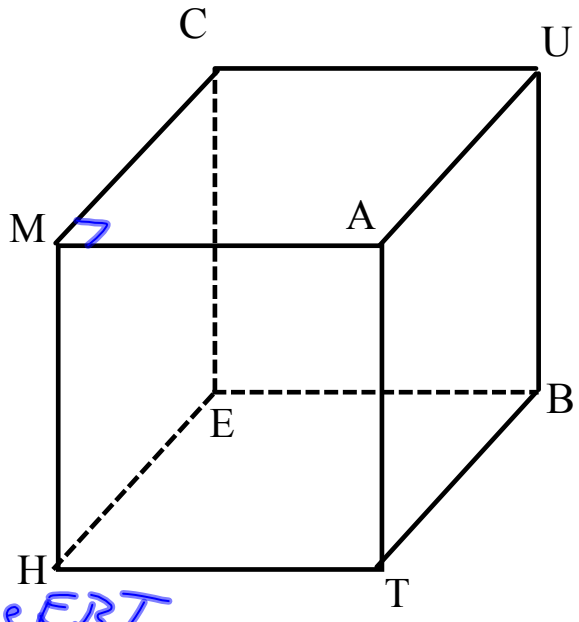
$\overleftrightarrow{MA}$ $\overleftrightarrow{MC}$

parallel planes

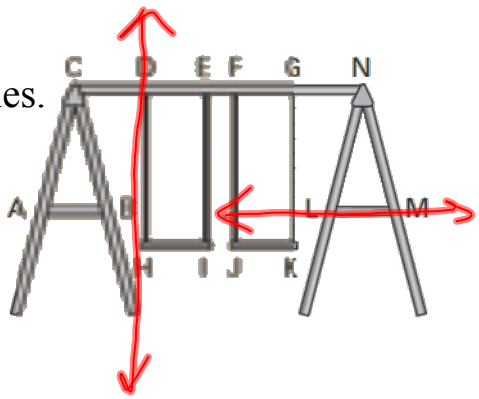
plane CUA plane EBT

perpendicular planes

plane CUA plane MAT



Ex. 2 Use the figure.



a. Name a pair of perpendicular lines.

$\overleftrightarrow{CN}$ $\overleftrightarrow{FJ}$

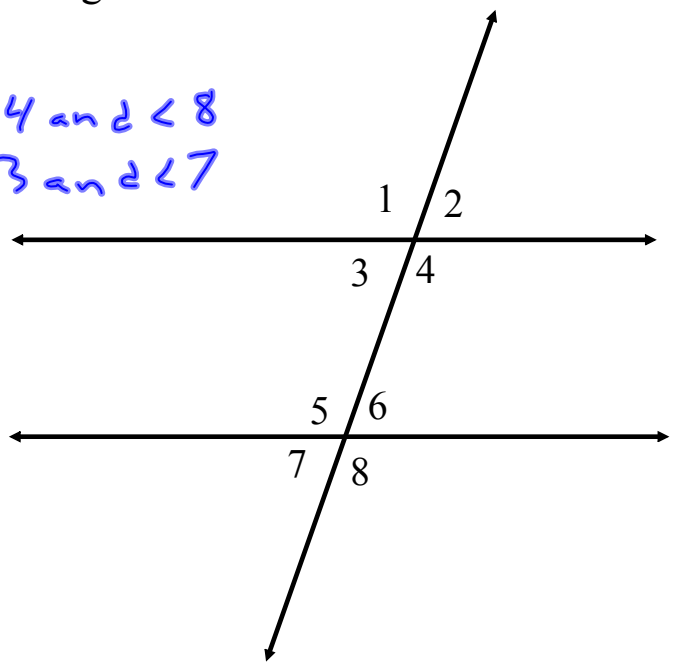
b. Name a pair of parallel lines.

$\overleftrightarrow{HD}$ $\overleftrightarrow{IE}$

c. Is $\overleftrightarrow{DH}$ perpendicular to $\overleftrightarrow{LM}$

NO

Ex 3 Identify all pairs of angles.



corresponding

$\angle 1$ and $\angle 5$ $\angle 4$ and $\angle 8$

$\angle 2$ and $\angle 6$ $\angle 3$ and $\angle 7$

alternate interior

$\angle 4$ and $\angle 5$

$\angle 3$ and $\angle 6$

alternate exterior

$\angle 8$ and $\angle 1$

$\angle 7$ and $\angle 2$

consecutive interior

$\angle 4$ and $\angle 6$

$\angle 3$ and $\angle 5$

vertical

$\angle 1 + \angle 4$ $\angle 5 + \angle 8$

$\angle 2 + \angle 3$ $\angle 6 + \angle 7$

Ex. 4 Complete the statement with always, sometimes, or never. Make a sketch to justify your answer.

a. If two lines are perpendicular, then they are always coplanar.

b. If two lines are coplanar, then they sometimes intersect.

c. If two lines are skew, then they are never parallel.