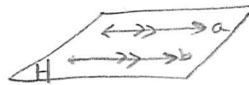


ESSENTIAL QUESTION: What angle pairs are formed by transversals?

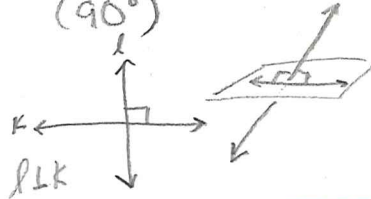
QUESTIONS:

Vocabulary:

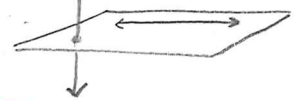
parallel lines (\parallel)
Do not intersect and are coplanar



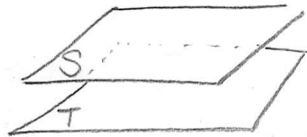
perpendicular lines (\perp)
Intersect at a right angle (90°)



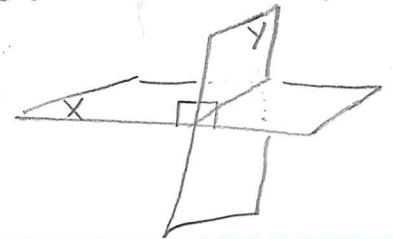
skew lines
Do not intersect and are not coplanar



parallel planes
Planes that do not intersect



perpendicular planes
Intersect at a right angle



A1. Each segment in the figure is part of a line. Which line(s) or plane(s) in the figure appear to fit the description?

a. Line(s) **parallel** to line CD and containing point A .

\overleftrightarrow{AB}

b. Line(s) **skew** to line CD and containing point A .

\overleftrightarrow{AF} , \overleftrightarrow{AE} , \overleftrightarrow{AH} and \overleftrightarrow{AG}

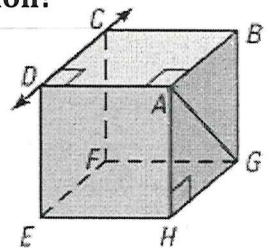
c. Line(s) **perpendicular** to line CD and containing point A .

\overleftrightarrow{AD}

d. Plane(s) **parallel** to plane EFG and containing point A .

plane ABC
 DBA

(multiple answers)



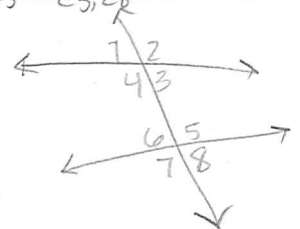
SUMMARY:

Corresponding Angles (CA) 4,16 24,27 22,25 23,28

Alternate Interior Angles (AIA) 4,5 3,6

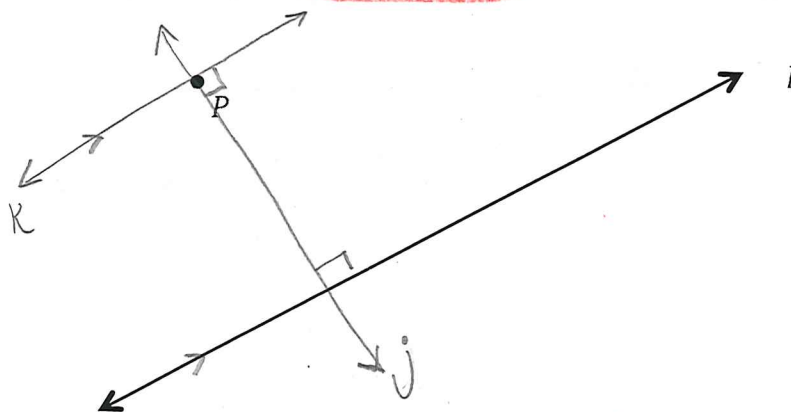
Alternate Exterior Angles (AEA) 1,8 2,7

Consecutive Interior Angles (CIA) 4,6 3,5



QUESTIONS:

A2. Sketch line k that is parallel to line l and goes through point P , and sketch line j that perpendicular to line l through point P .



Postulate 13: Parallel Postulate

If there is a line and a point not on the line, then there is exactly one line through the point parallel ($//$) to the given line.

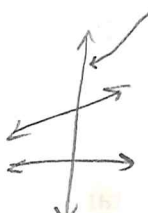
Postulate 14: Perpendicular Postulate

If there is a line and a point not on the line, then there is exactly one line through the point perpendicular (\perp) to the given line.

Vocabulary:

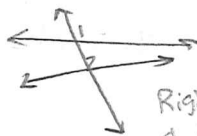
transversal

A line that intersects 2 or more coplanar lines at different points



corresponding angles

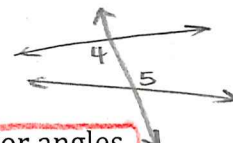
Have corresponding positions $\angle 1$ & $\angle 2$



Right side & Above

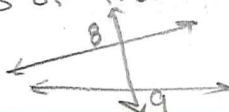
alternate interior angles

Angles that lie between 2 lines & opposite side of transversal



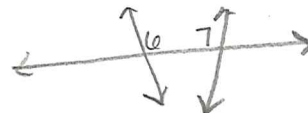
alternate exterior angles

Lie on outside of 2 lines & on opposite sides of transversal

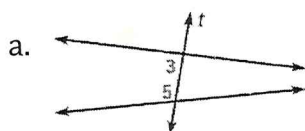


consecutive interior angles

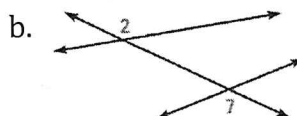
Lie between 2 lines and on same side of transversal



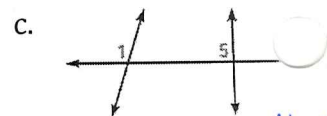
A3. Give the angle pair name for the numbered angles in each.



consecutive interior angles



Alternate Exterior Angles



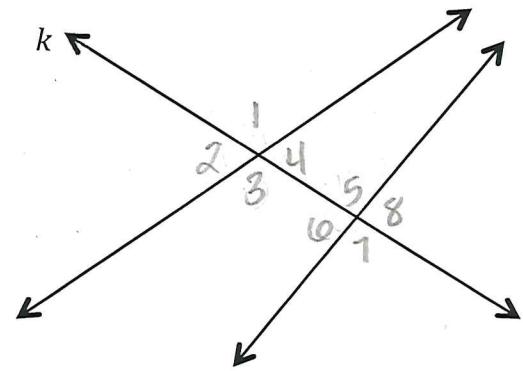
Corresponding Angles

List all possible pairs, given Line k is the transversal.

QUESTIONS:

A4. Put the given numbers on the diagram to show a possible answer if line k is the transversal.

- a. Corresponding Angles
 $\angle 1, 5$ $\angle 4, 8$ $\angle 2, 6$ $\angle 3, 7$
- b. Alternate Interior Angles
 $\angle 4, 6$ $\angle 3, 5$
- c. Consecutive Interior Angles
 $\angle 3, 6$ $\angle 4, 9$
- d. Alternate Exterior Angles
 $\angle 2, 8$ $\angle 1, 7$



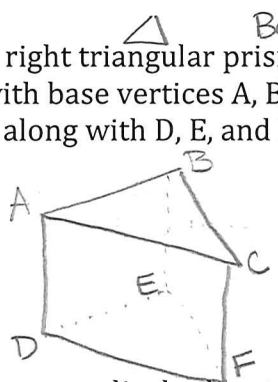
A5. Analyze the map at the right and name the following...

- a. A pair of parallel streets.
 Losey & 26th St. S.
- b. A pair of perpendicular streets.
 Losey & Green Bay
- c. A "transversal" street.
 State Road

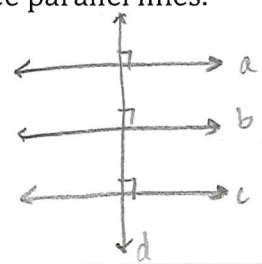


A6. Sketch the following...

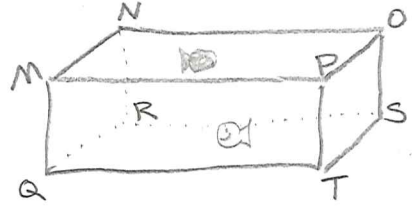
- a. A right triangular prism with base vertices A, B, and C along with D, E, and F.



- c. A perpendicular line to three parallel lines.



- b. A rectangular fish tank with vertices M, N, O, P, Q, R, S, and T. Include fish!



- d. Two parallel lines and a transversal. Find all angle measures if an acute angle is 51° .

