Good morning! Here is your warm-up! :)
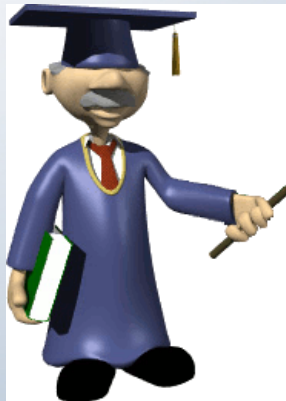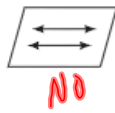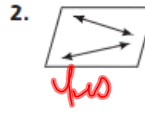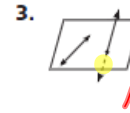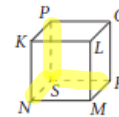
What were the building blocks of Euclidean geometry?

- Points

- Lines

- Planes

2 pnt

2 line
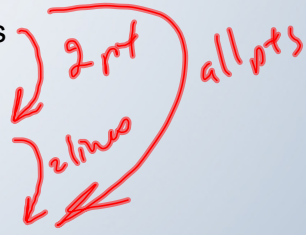
all pts

Definition of a line?

A straight arrangement of points that extends

forever in two directions

What if we just considered just a part of a line...

Segment

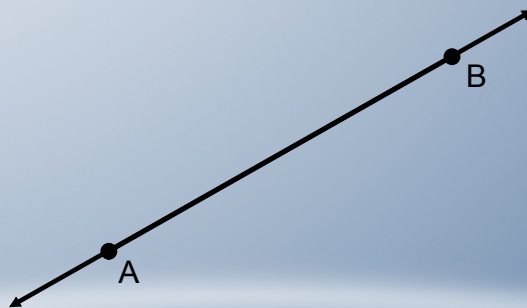- Consists of 2 pts & all pts btwn that lie on the line containing the 2 pts.

- Has length but no thickness (duh! it is part of a line...sheesh!)

- Named by the 2 endpoints:

B

A

$\overleftrightarrow{AB}$ line AB

$\overline{AB}$ segment AB

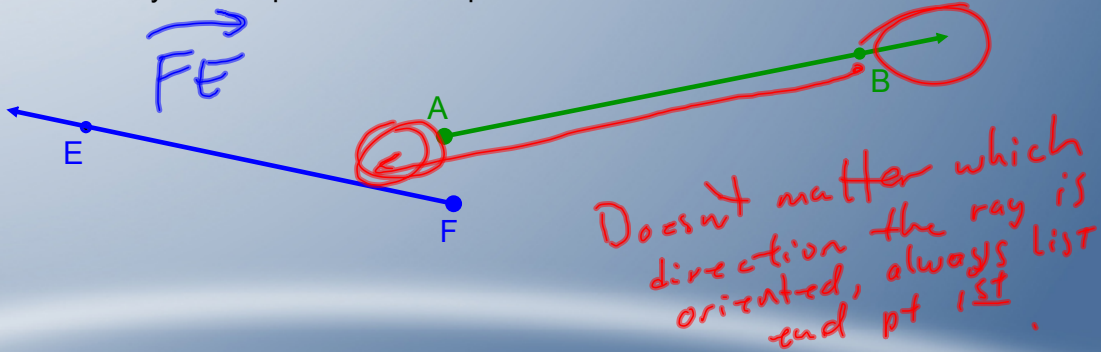
Name all the segments shown in this line:

Z

Y

f

X

$\overline{XY}$ same $\overline{YX}$

$\overline{XZ}$

$\overline{YZ}$
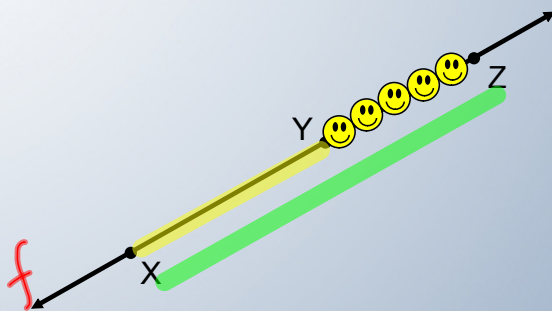
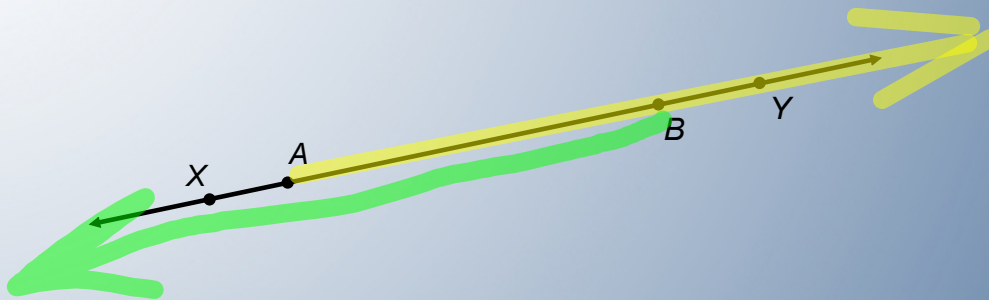$\overleftrightarrow{XZ}$, $\overleftrightarrow{XY}$ same

Now...what if you jump onto a line & look in 1 direction?

Ray

- Ray *AB* is the part of $\overleftrightarrow{AB}$ that contains pt *A* & all pts on $\overleftrightarrow{AB}$ on the same side of pt *A* as pt *B*

- Has direction but no thickness

- Has *infinite* length
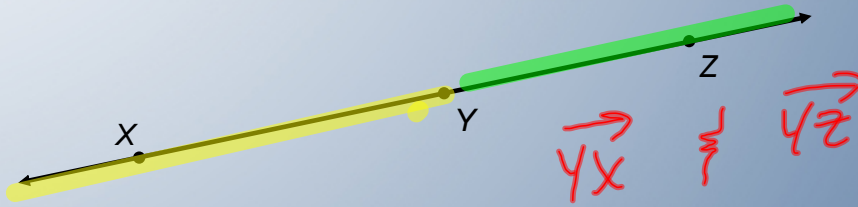
- Named by the endpt & one other pt on the line

$\overrightarrow{FE}$

E

A   B

F

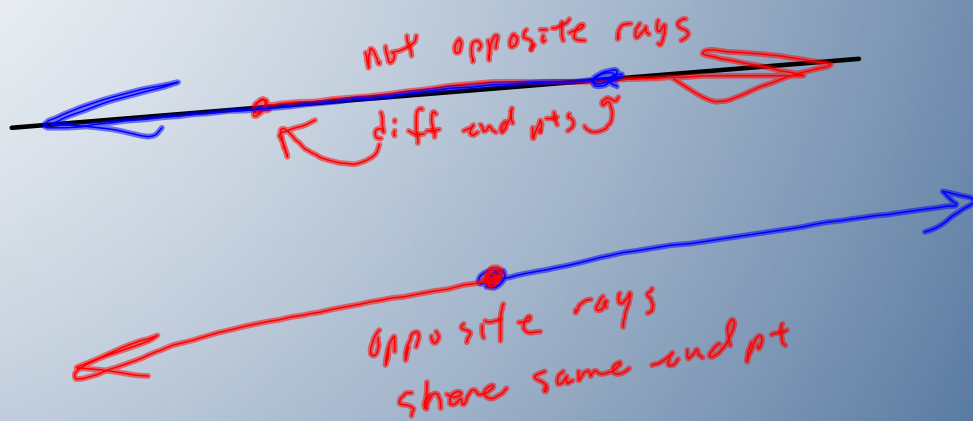$\overrightarrow{BA}$ (crossed out)

$\overrightarrow{AB}$

$\overrightarrow{BA}$

Doesn't matter which direction the ray is oriented, always list end pt 1st.

Is $\overrightarrow{AB}$ the same as $\overrightarrow{BA}$?

X   A   B   Y

Opposite Rays

- 2 collinear rays that share the ***same*** endpt
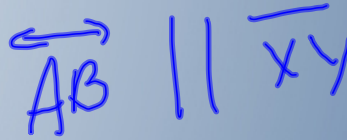
- Together they ***always*** form a ___Line___

$\overrightarrow{YX}$ & $\overrightarrow{YZ}$

X   Y   Z

Above, which opposite rays together form line $\overleftrightarrow{XZ}$?

---

not opposite rays

diff end pts 😕

opposite rays
share same endpt

Parallel Lines

- **Coplanar** lines that do not intersect

$$\overleftrightarrow{AB} \parallel \overline{XY}$$

- Represented by the symbol $\parallel$

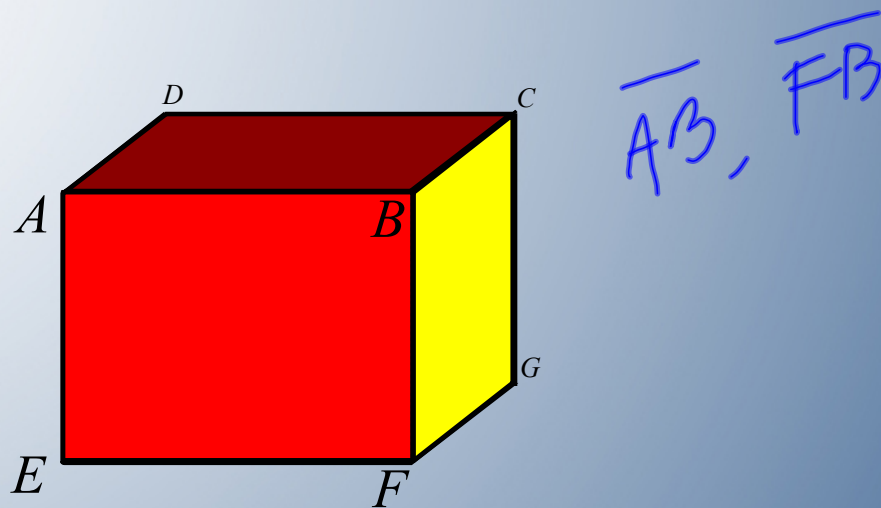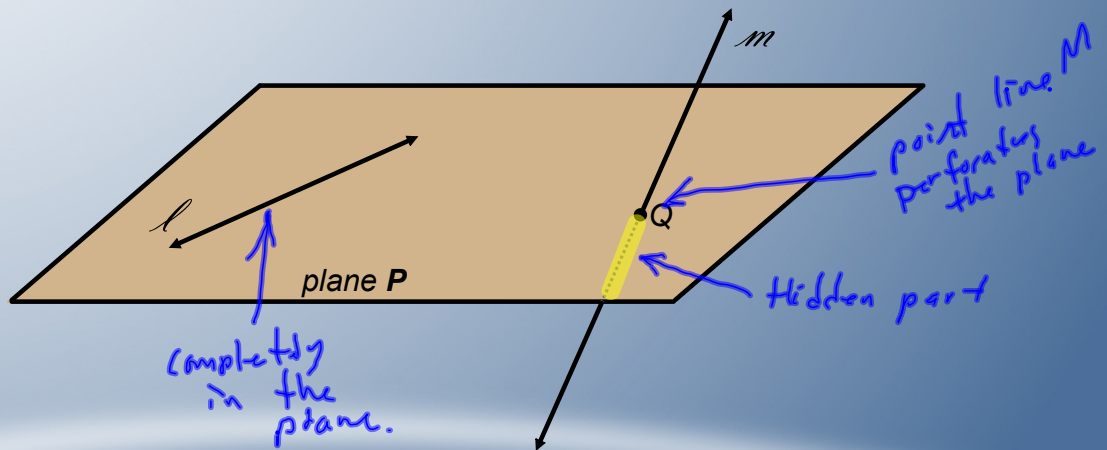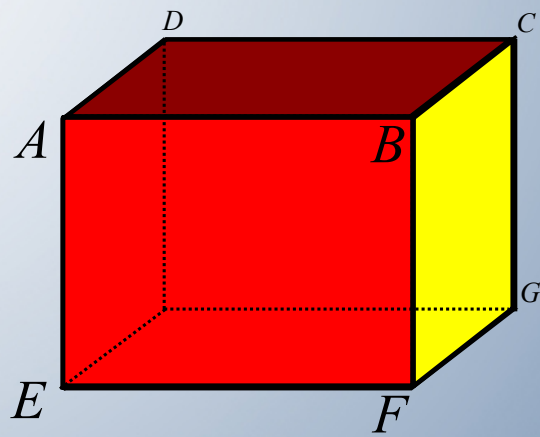- If line *AB* is parallel to line *FG* then $\overleftrightarrow{AB} \parallel \overleftrightarrow{FG}$
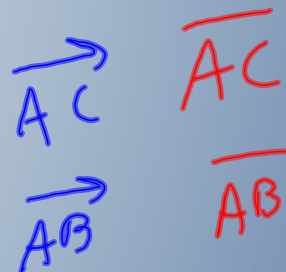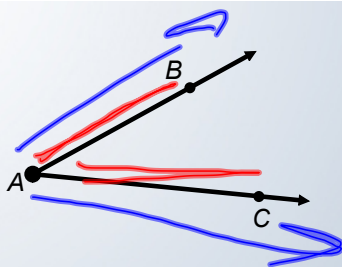
Name all the segments and rays formed:

$$\overrightarrow{AC} \qquad \overline{AC}$$

$$\overrightarrow{AB} \qquad \overline{AB}$$

If 2 lines are not parallel, will they intersect?

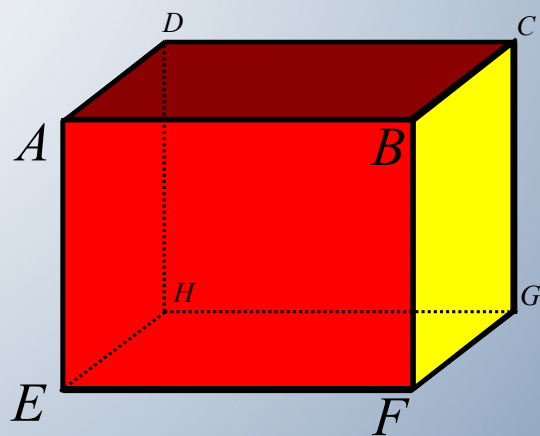*Skew Lines*

- *Noncoplanar* lines that do not intersect

- No symbol to represent skew lines...sorry bout that :(

plane **P**

m

ℓ

Q

point line M
perforates
the plane

Hidden part

Completely
in the
plane.

D

C

A

B

E

F
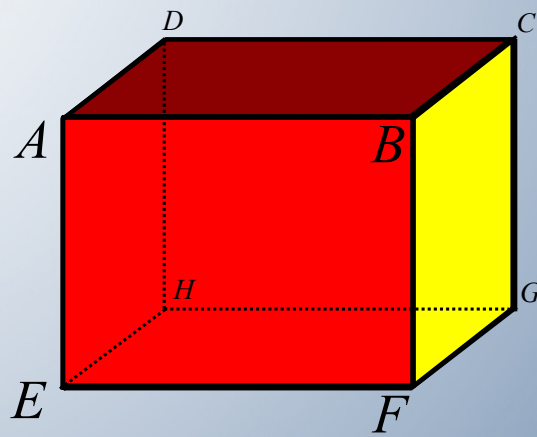
G

$\overline{AB}$, $\overline{FB}$

What do we call planes that do not intersect?
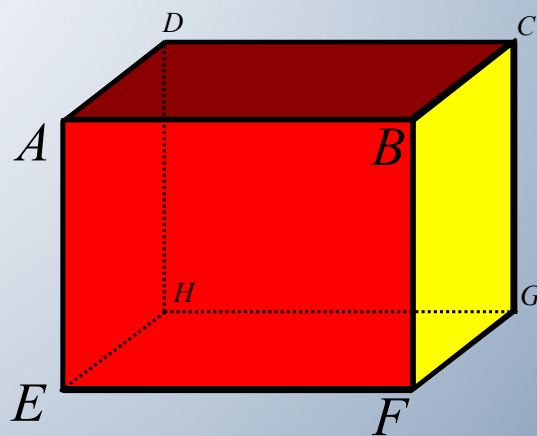
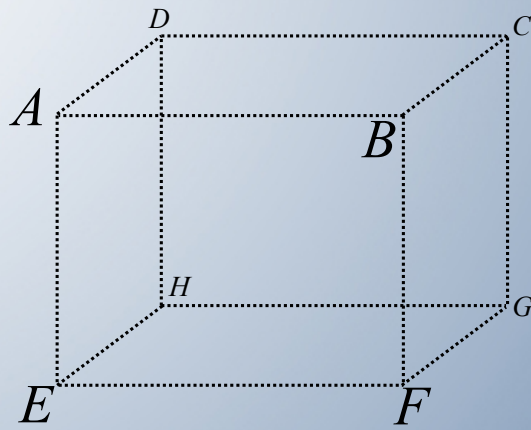What do we call planes that do not intersect?

...drum roll please...

What do we call planes that do not intersect?
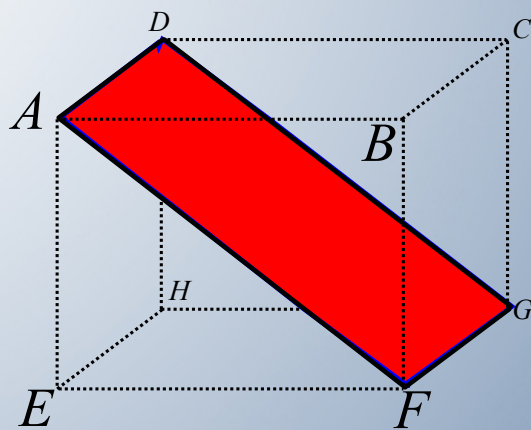
...drum roll please...

Parallel planes

What would *plane AFGD* look like?

What would *plane AFGD* look like?

L1.3 HW Problems

Pg 19, #1-49 odd, 58, 60

Pg 23, #1-10