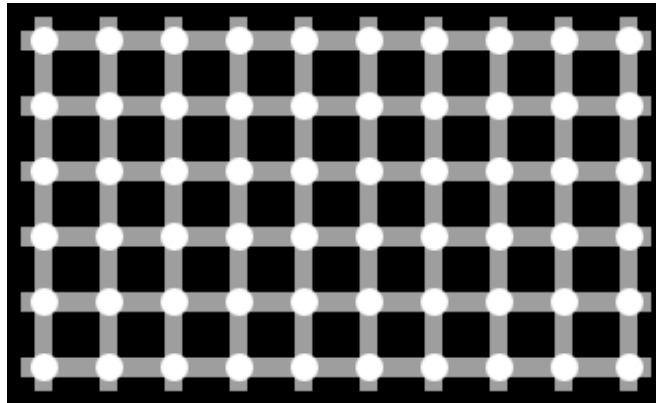How many black circles do you see?

Geometry

"geometria" is _____

      combo of geo   (earth)
      and   metria (measure)

  study of shapes and sizes of objects and figures

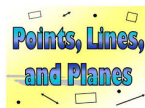**Graph each inequality.**

1. $x \leq 1$ **2.** $-2 \leq x \leq 3$

3. Juan has more than 5 but fewer than 11 fish in his aquarium. Write an inequality to express the number of fish f Juan has.

1) ⟵————●   2) ●————●   3) $5 < f < 11$
         1   -2   3

Chapter 1
Essentials of Geometry

1.3 Use Midpoint and Distance Formulas

1.5 Use Special Angle Relationships to Find Angle Measures

1.1 Identify Points, Lines, and Planes

Points, Lines, and Planes

Midpoint

I'll meet you half way.

We are 10 feet apart!

5'   5'

1.6 Classify Polygons

TRIANGLE QUADRILATERAL PENTAGON HEXAGON

HEPTAGON OCTAGON NONAGON DECAGON

POLYGON
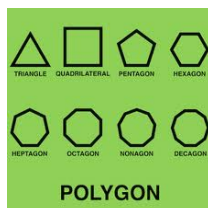
1.4 Measure and Classify Angles

Acute
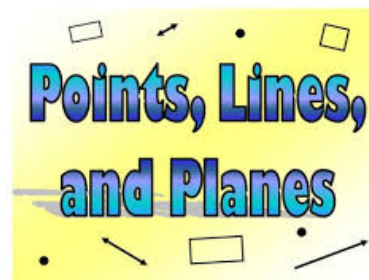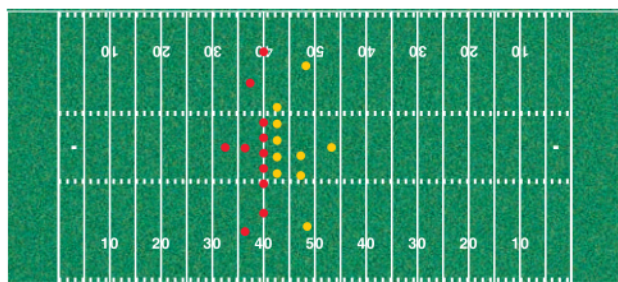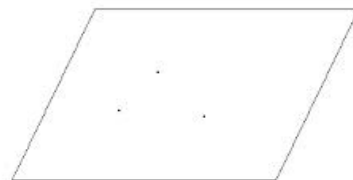
Straight

Right

Reflex

Obtuse
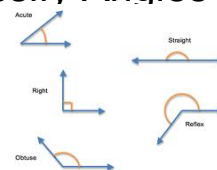
1.2 Use Segments and Congruence
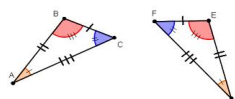
1.1 Identify Points, Lines, and Planes

Goal: Name and sketch geometric figures
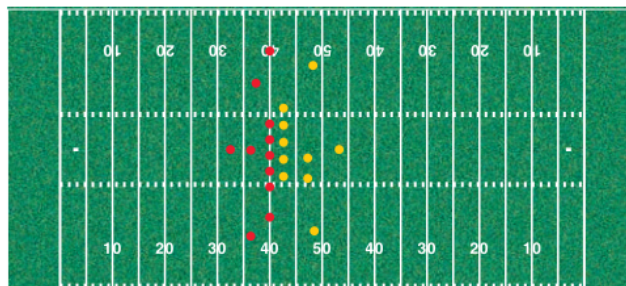

Undefined Terms - words that do not have a formal definition,
*   but there is agreement about what the words*
*   mean*

(Point, Line, and Plane)

(very much like a, an, and, or, if, the, of, then... in English)

In the diagram of
a football field, the
positions of players are
represented by *points*.
The yard lines suggest
lines, and the flat surface
of the playing field can
be thought of as a *plane*.

Undefined Terms

Point - a point has no dimension
　　　　it is represented by a dot

$\overset{\bullet}{A}$
point *A*　　　　　(0-d)

$\overleftrightarrow{AB}$ $\overleftrightarrow{BA}$ line ℓ

Line - a line has one dimension
　　- represented by a line with 2
　　　arrowheads, extends without end
　　　ex) number line, string, rope, pencil

line ℓ, line AB ($\overleftrightarrow{AB}$),
or line BA ($\overleftrightarrow{BA}$)　　(1-d)

Plane M　　Plane ABC

Plane - a plane has 2 dimensions
　　- represented by a shape that
　　　looks like a wall or floor,
　　　extends without end
　　　ex) desk top, tennis court, paper
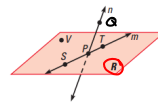
plane *M* or plane *ABC*　　(2-d)
flat surface

* through any 3 points not on the same line, there is
　exactly one plane

Collinear points - points that lie on the same line
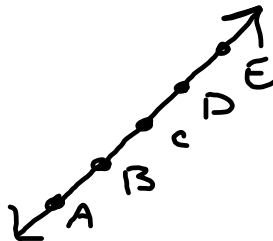
Coplanar points - points that lie on the same plane

Name points, lines, and planes

a. Give two other names for $\overleftrightarrow{PQ}$ and for plane *R*.
b. Name three points that are collinear.
　Name four points that are coplanar.

a) line n　　plane TVS
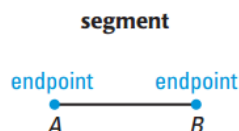　$\overleftrightarrow{QP}$　　　　USP

b) SPT
　VTPS

Line　$\overleftrightarrow{AB}$

line
　　　A　　　B

$\overleftrightarrow{AC}$　$\overleftrightarrow{BE}$　$\overleftrightarrow{DB}$　$\overleftrightarrow{EA}$

$\overleftrightarrow{CD}$　　$\overleftrightarrow{AB} = \overleftrightarrow{BA}$

Segment or (Line Segment) - consists of 2 endpoints and all
　　　　　　　　　　　　points between those endpoints

segment
endpoint　　　endpoint
　　A　　　　　B

$\overline{AB}$　$\overline{DB}$　$\overline{AE}$　$\overline{EC}$

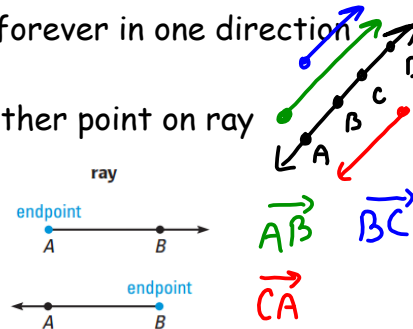Segment $\overline{AB}$　　$\overline{CD}$　　$\overline{BE} = \overline{EB}$

Ray - consists of an endpoint and all points on a line extending
        in just one direction

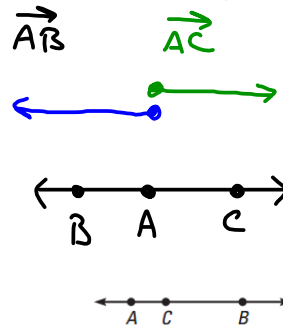 - like a laser beam, continues forever in one direction

  - named by endpoint and any other point on ray

Ray $\overrightarrow{AB}$ $\boxed{\overrightarrow{CA} \neq \overrightarrow{AC}}$

ray

endpoint
A ———— B

endpoint
A ———— B

$\overrightarrow{AB}$ $\overrightarrow{BC}$

$\overrightarrow{CA}$

Opposite Rays - 2 rays that share and form a straight line

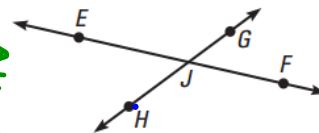$\overrightarrow{AB}$ $\overrightarrow{AC}$

$\overrightarrow{AB}$ and $\overrightarrow{AC}$ are
opposite rays iff
A is between B and C

B   A   C

A   C   B

Name segments, rays, and opposite rays

1. a. Give another name for $\overline{GH}$. $\overline{HG}$

   b. Name all rays with endpoint J. Which
      of these rays are opposite rays?

   $\overrightarrow{JE}$ $\overrightarrow{JF}$

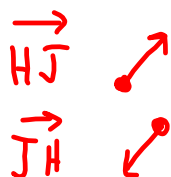 $\overrightarrow{JG}$ $\overrightarrow{JH}$

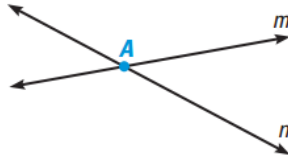2. Give another name for $\overline{EF}$. $\overline{FE}$

3. Are $\overrightarrow{HJ}$ and $\overrightarrow{JH}$ the same ray? Are $\overrightarrow{HJ}$ and $\overrightarrow{HG}$ the same ray? *Explain.*

No - different fixed
   endpoints

$\overrightarrow{HJ}$

$\overrightarrow{JH}$

Yes - J and G lie on
       same side of H

Intersection - the point or points that 2 or more figures have in common

point A is the intersection of line m and line n

$\overleftrightarrow{AB}$ line

$\overline{AB}$ segment

$\overrightarrow{AB}$ ray

AB distance   just a # (length)

A point

HW: Pg 5 #'s 1-22, 26, 27, 29, 31 , 33-38, 43

HW: Pg 5 #'s 1-22, 26, 27, 29, 31 , 33-38, 43