Agenda

- Quick Intro
- Materials
- K-W-L
- Graphic Organizer and Video about Dimensions
- Ice Breaker
- Basic Terms Geometry
- HW: Worksheet on dimensions due tomorrow

  Pre-course Packet Due Friday*

  *Worth three homework grades

Introduction- Who am I!?

Experience:

Questions?

Materials

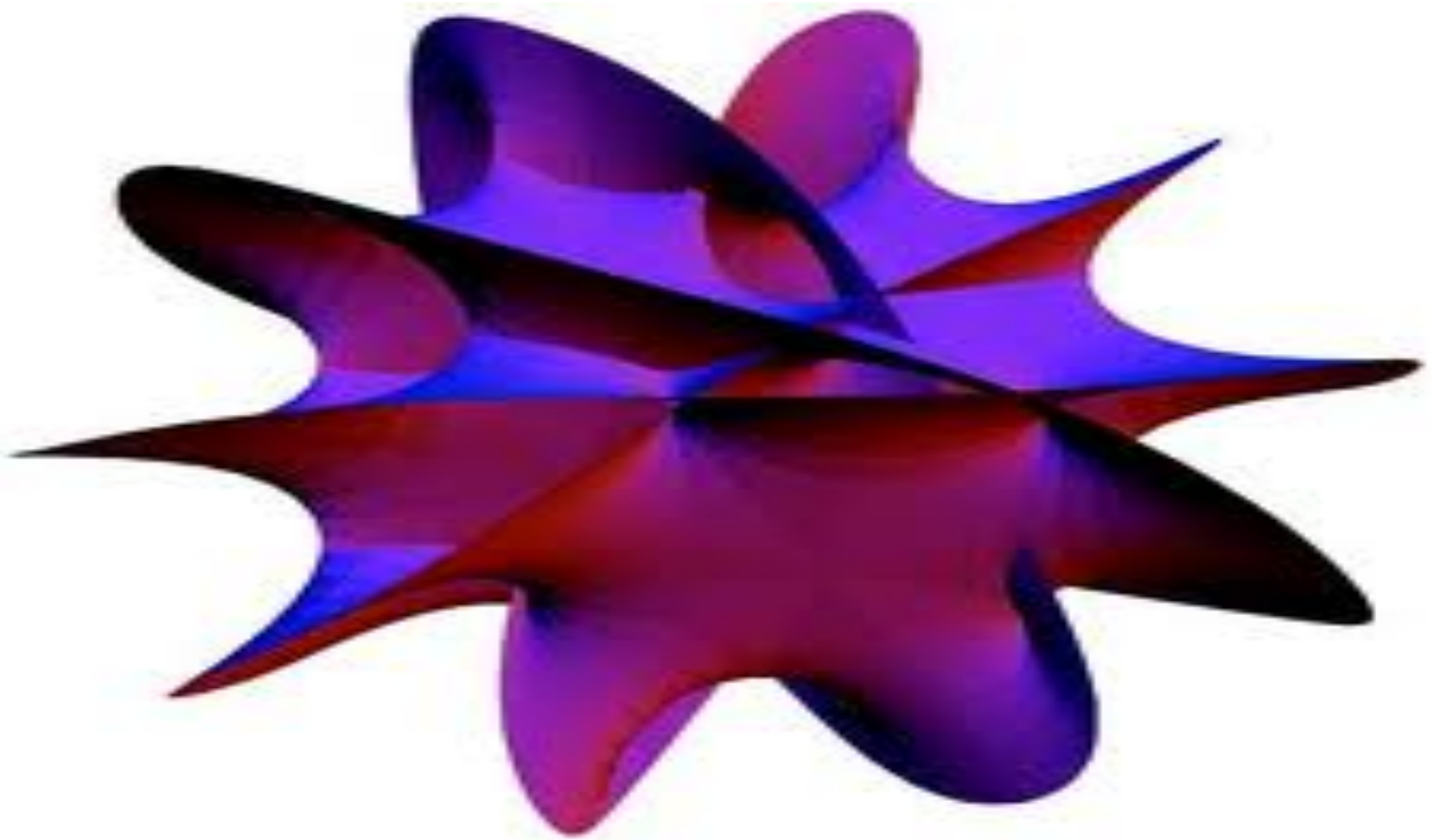
- Scientific Calculator
- Compass
- Pencils
- Paper
- Some sort of organizer (binder preferred)

KWL!

K–W–L

Think I Know **K**	*Want to Know and Be Able to Do* **W**	*I Learned* **L**

Dimensions!



0 dimensional

1 dimensional

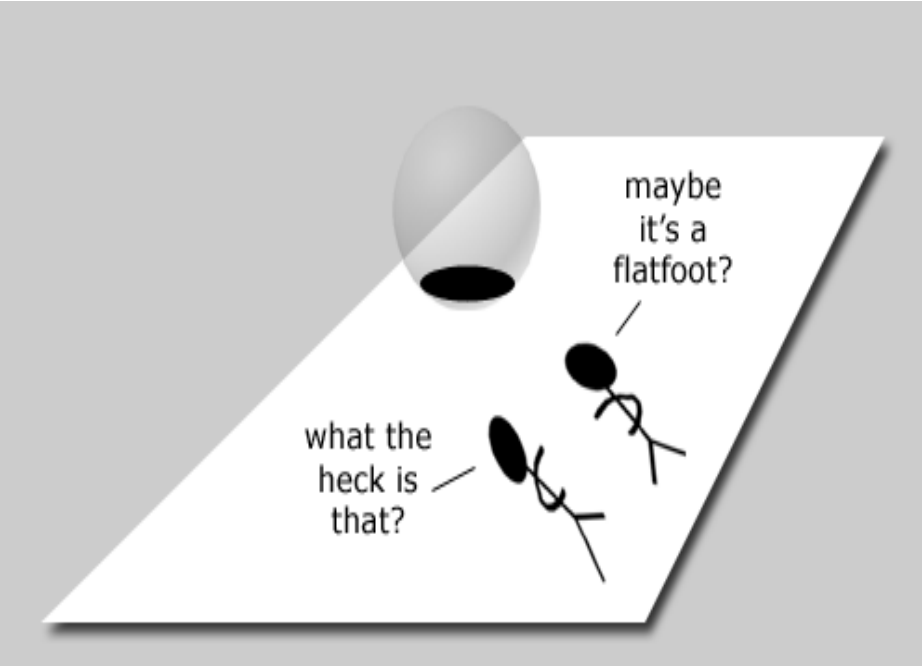
2 dimensional

3 dimensional

4 dimensional

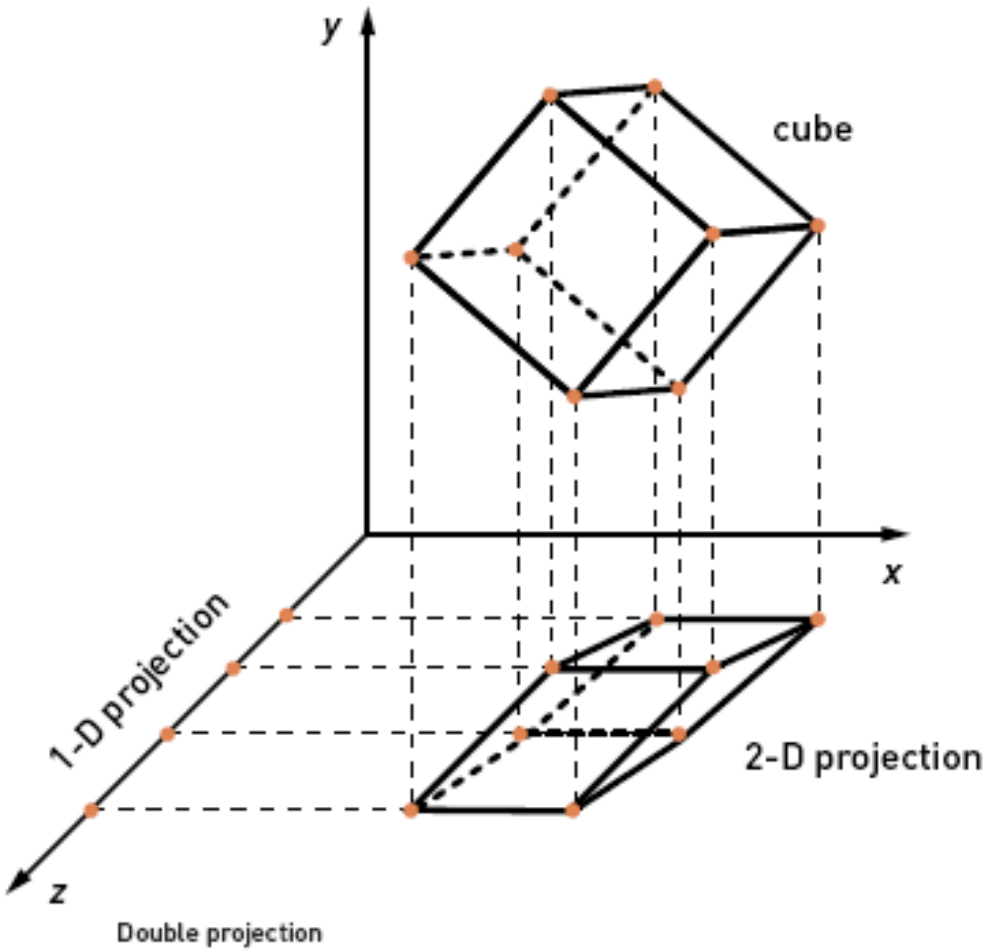
What would life be like in the 2d?

- Flatland



The Fourth Dimension

- The Fourth Dimension



https://www.youtube.com/watch?v=Bn7HDBj9ZQQ

Shadows!

Who are you!?!

On a notecard, write down one fact about yourself. When you are done, raise your hand and I will collect your card. Do NOT write your name on it.

Then, I will randomly hand out your cards to people in the class. You will have to find the person who wrote the card. Find out their name and write it on the back of the card.

You will have to read out their card and their name to the class after.

Do Now: Quick Write

- What are you most excited about going into Honors Geometry?
- What makes you most nervous?
- What type of math student are you usually?
- Is there anything else you'd like me to know about you as a person or student?

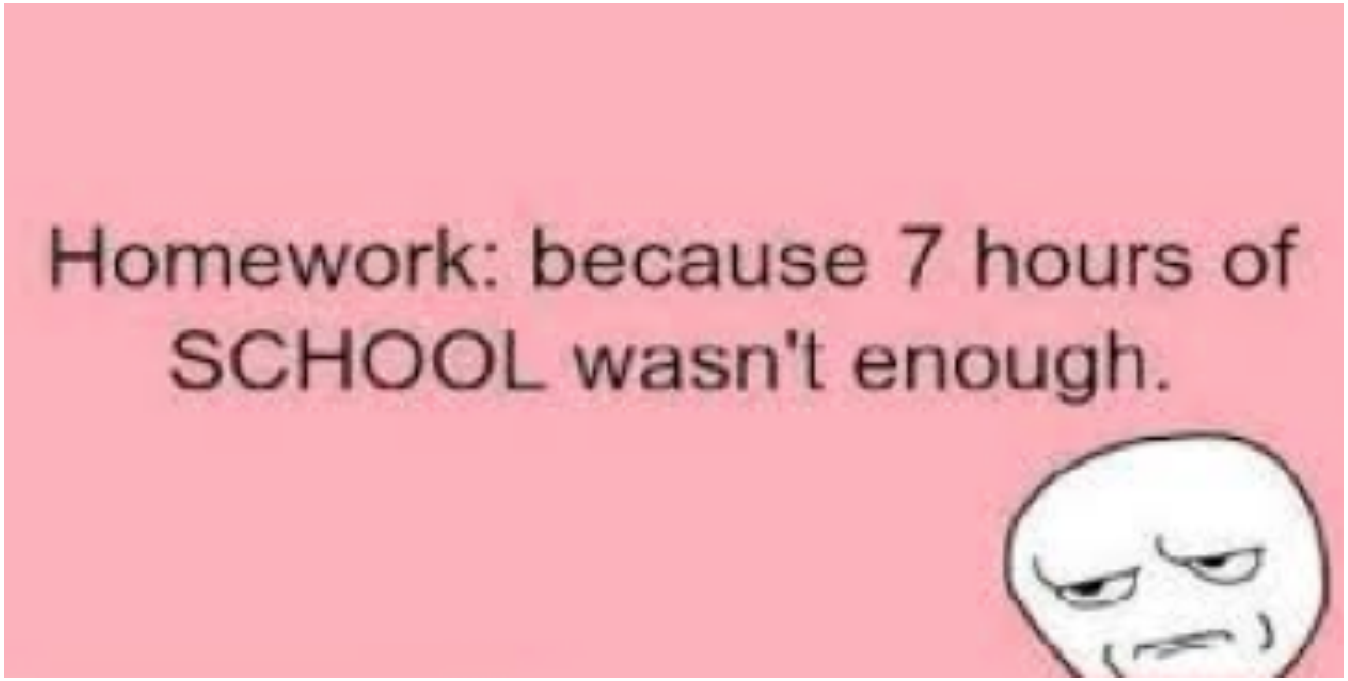
Agenda

- HW Check
- Basic Terms in Geometry
- Whiteboards
- Class Competition
- More vocabulary!
- Newlywed Game (if time)
- HW: Notation Worksheet due tomorrow

  Pre-course Packet Due Friday*

  *Worth three homework grades

HW Check



A point

- Can you define a point!?

NO!

In geometry, some words such as *point, line, and plane are undefined. In order to define these words you need to use words that need further defining. It is important however, to have general descriptions of their meanings.*

A point continued

1. You can think of a point as a location.
2. A point has no size
3. It is represented by a small dot and is named by a capital letter

Picture:

Notation:

Lines

- In Euclidean geometry, a line is undefined. You can think of a line as a series of points that extend in two directions without end.

Picture:

Notation:

Line Segments

- A segment is the part of a line consisting of two points, called endpoints, and all points between them.

Picture:

Notation:

Ray

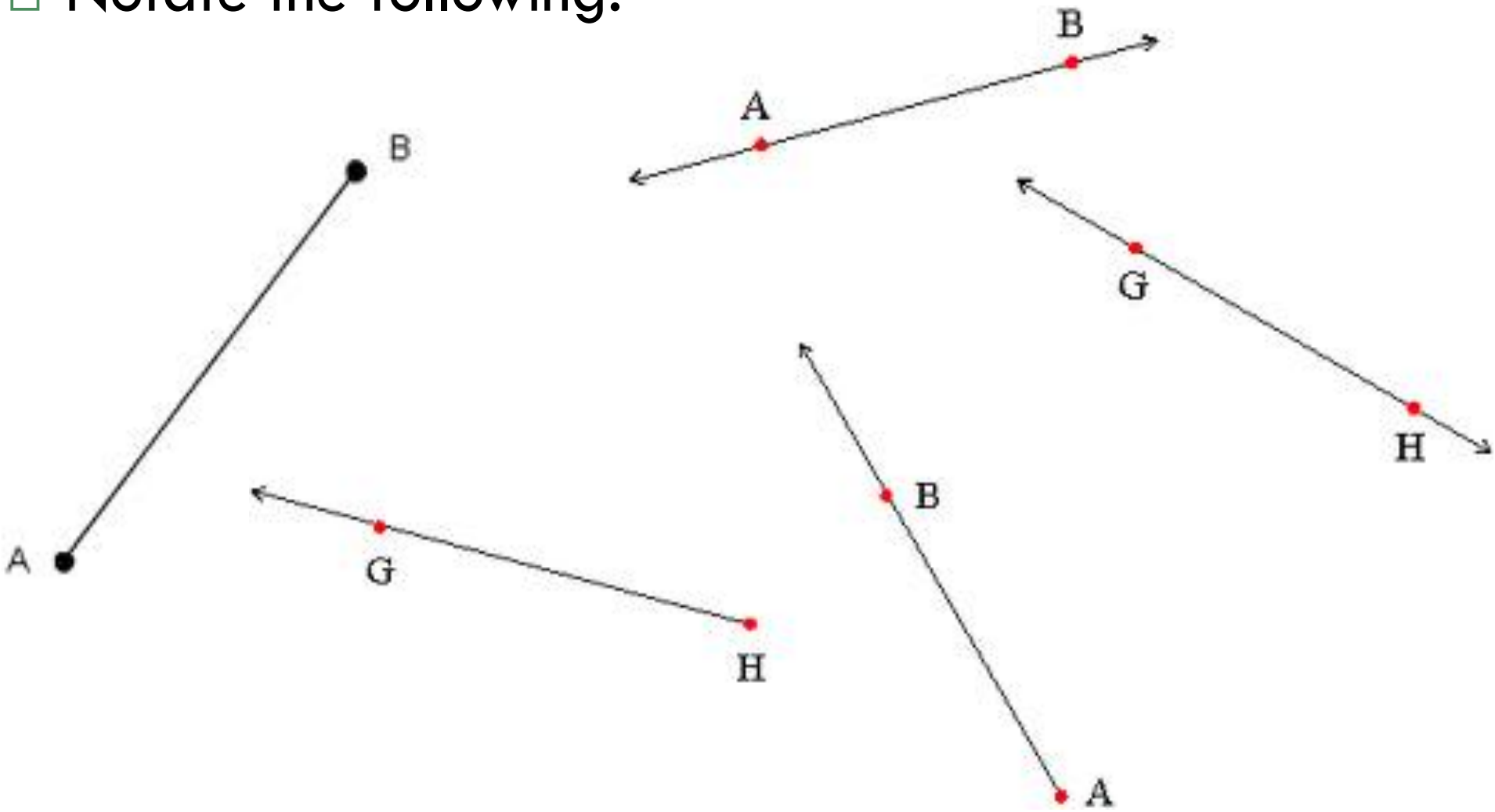
- A ray is the part of a line consisting of one endpoint and all the points of the line on one side of the endpoint.

Picture:

Notation:

Practice

- Notate the following:



CAN YOU GET IT!?

- Name this ray:

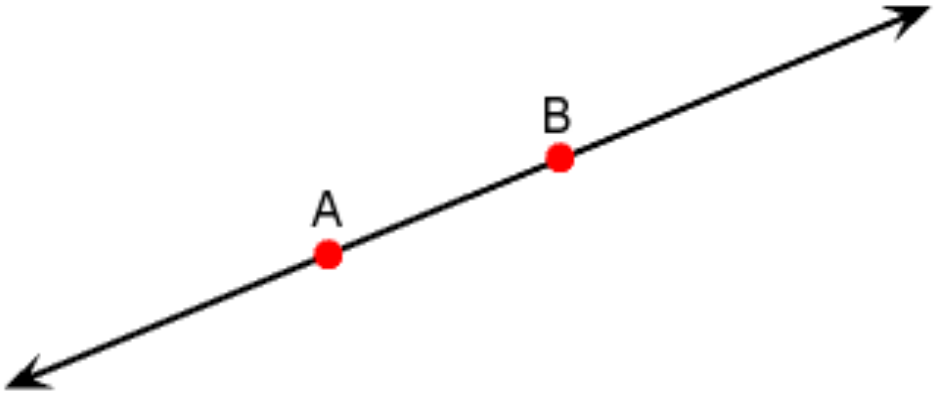
Can you name everything you see here?

Whiteboard Fun!

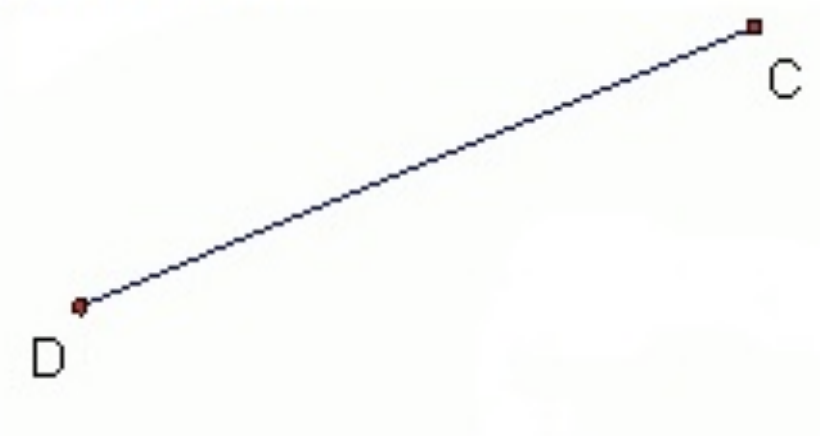
- I will show you an image on the screen. Using your whiteboard, notate the picture, and show me your answer!

Notate the Following:

Notate the Following:



Notate the Following:



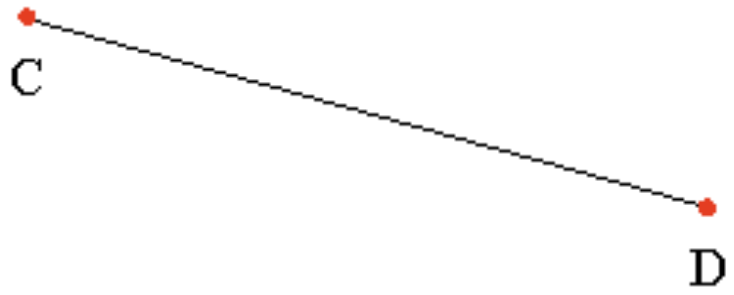
Notate the Following:

Notate the Following:

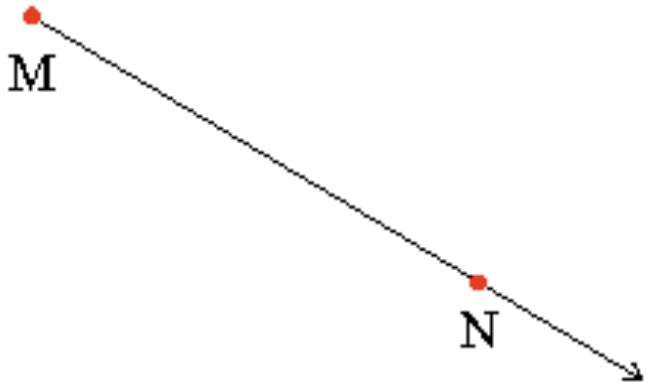
Notate the Following:

Notate the Following:

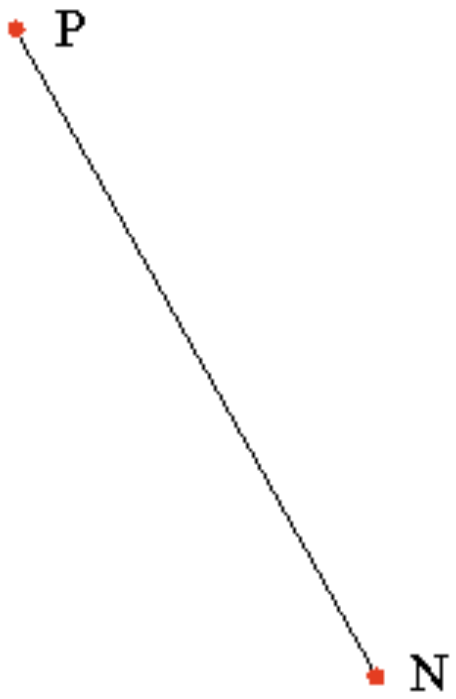
Notate the Following:



Notate the Following:



Notate the Following:



Notate the Following:

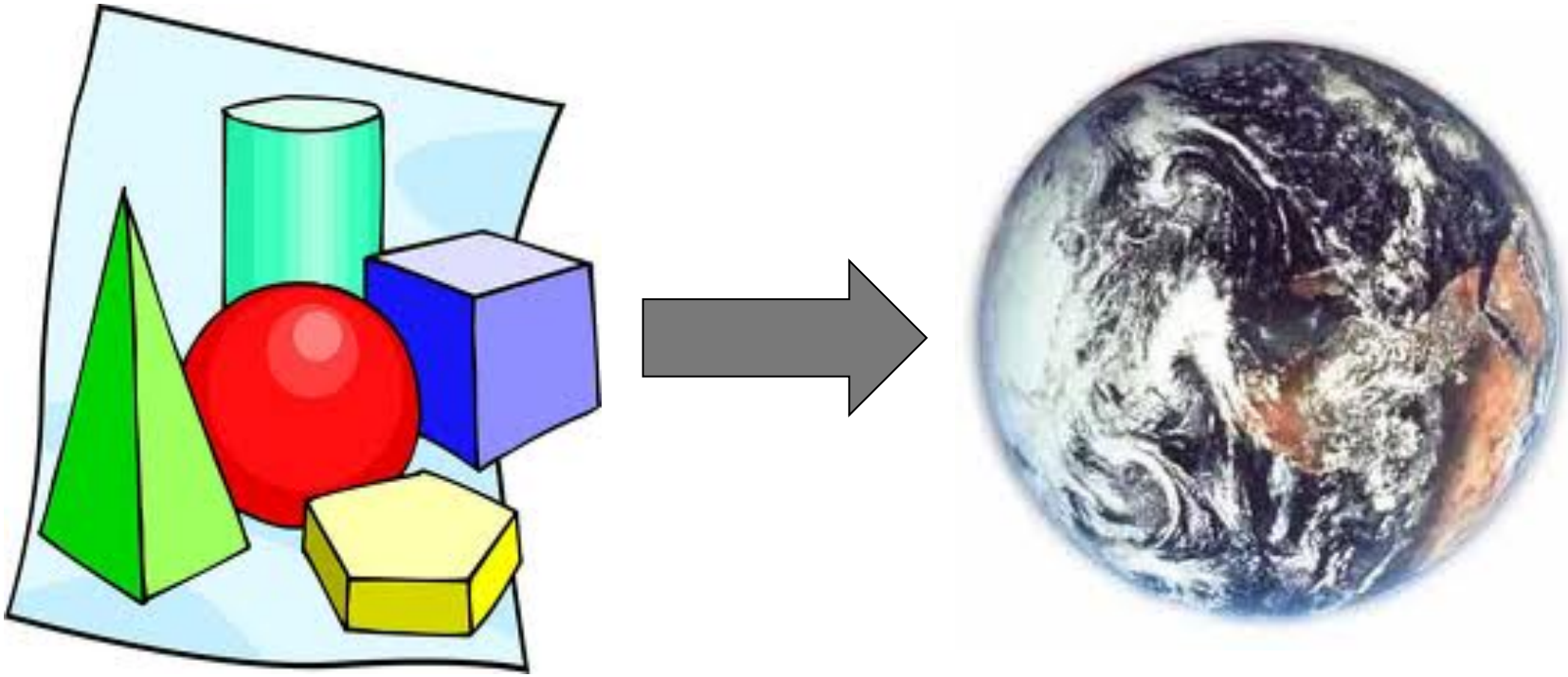
Notate the Following:

Notate the Following:

Notate the Following:

Real World

Geometry terms in the real world:



Where do you see points, lines, line segments, and rays in the real world?

Class Competition

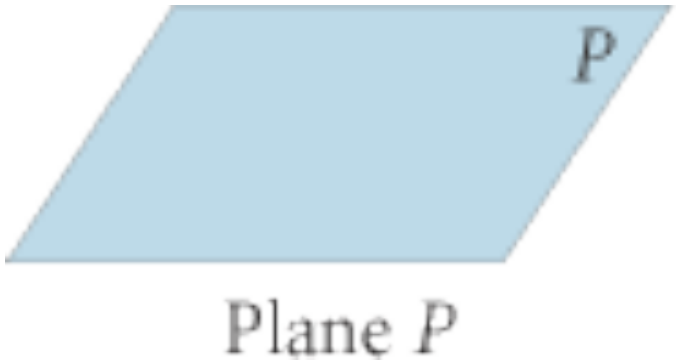
- You and your partner (or you alone) have 5 minutes to write down as many examples of points, lines, line segments, and rays in the real world as possible. The team or person with the most correct examples wins…..
-

Points, Lines, Line Segments, and Rays

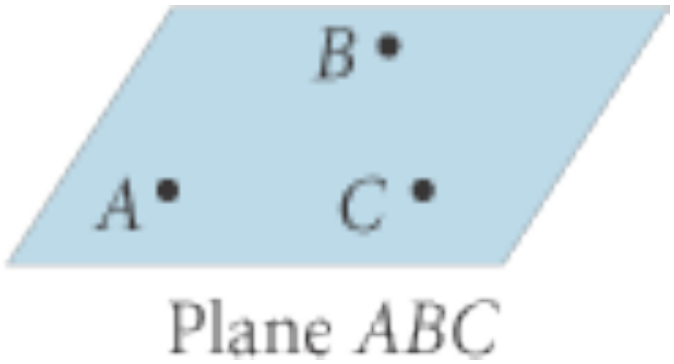
Plane

- You can think of a plane as a flat surface that has no thickness. It goes on forever!

Picture and notation:



Plane P



Plane ABC

Collinear Points

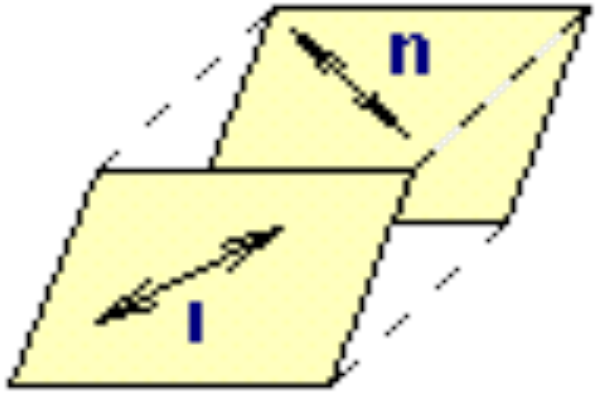
Collinear Points: Points that lie on the same line

Think and Explore

- Are these points that we have around the room collinear?

Coplanar

Coplanar lines



Noncoplanar lines
(also called skew lines)

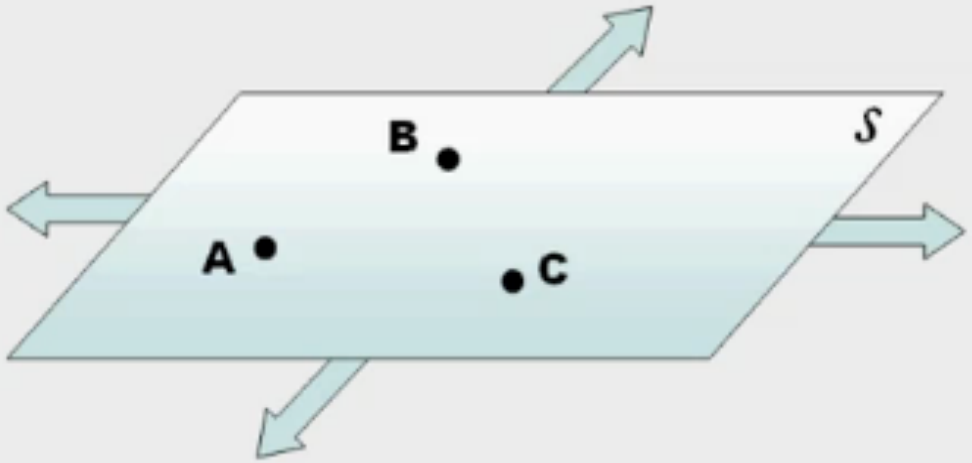
Coplanar: Points and lines that lie in the same plane

Think and Explore

- Are these points and lines that we have around the room coplanar?

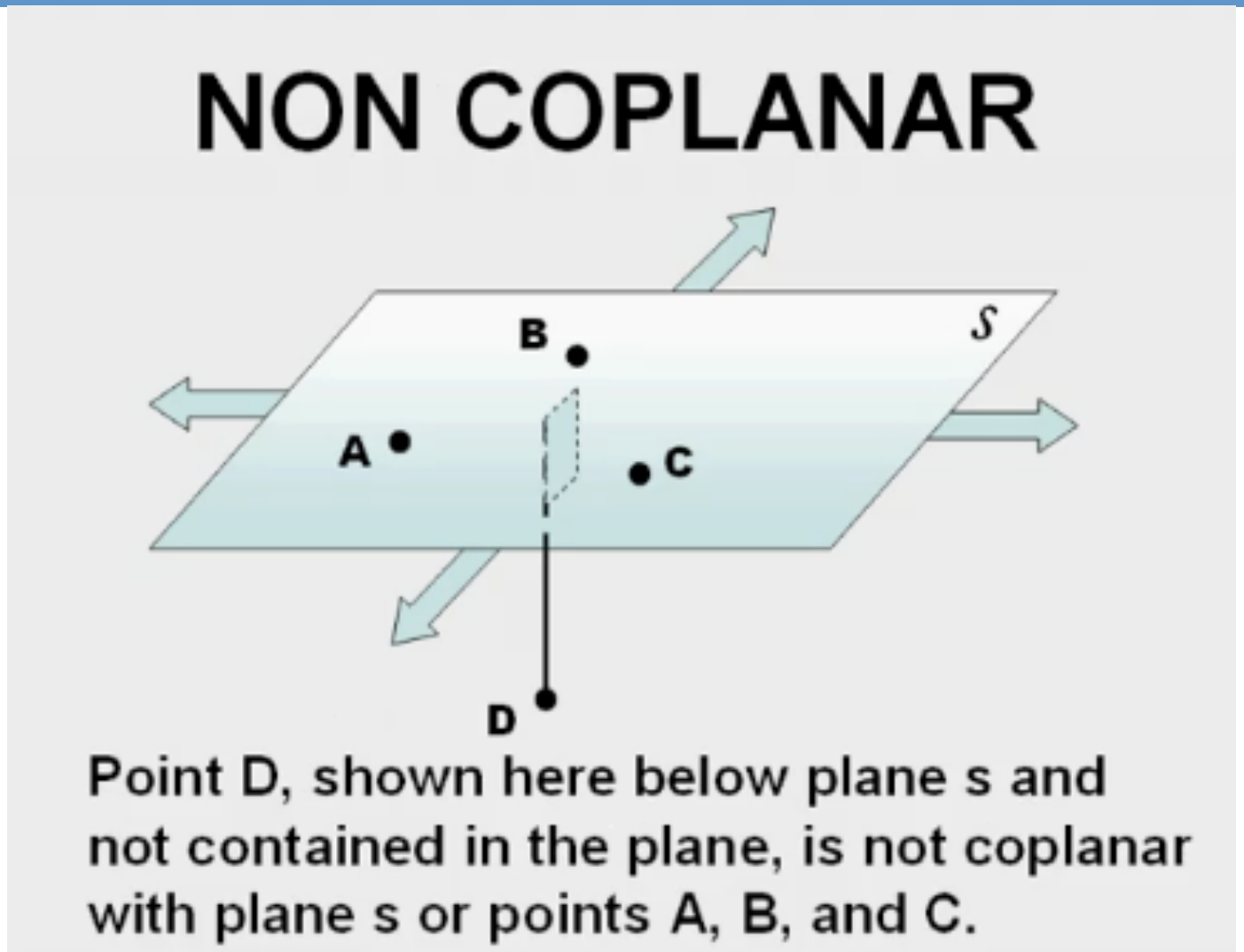
Good Picture!

COPLANAR



Points A, B, and C are contained in the plane s. Points A, B, and C are "coplanar" because they lie in the same plane, plane s.

Another Good Picture



Think and Explore

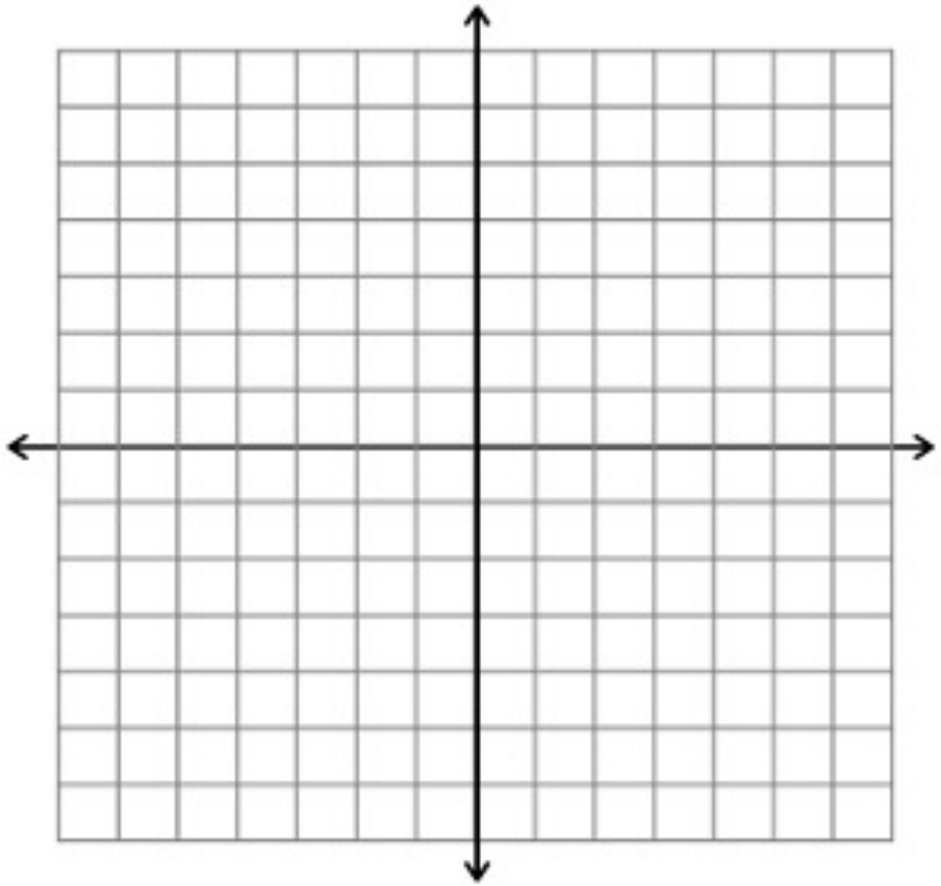
- How many points determine a line?
- How many points determine a plane?

Quick self quiz

- 1. Draw line AB and give its notation
- 2. Draw line segment AB and give its notation
- 3. Draw ray AB (endpoint A) and give its notation
- 4. Draw plane ABC and give its notation
- 5. Draw 3 points that are not collinear
- 6. Draw 4 points that are not coplanar (make sure to draw a plane in your drawing)

Do Now

- Graph the equation and determine if the point (1, 2) lies on the line $3x + 5y = 15$



Agenda

- HW Check
- More vocabulary
- Newlywed Game
- Parallel and Perpendicular
- HW: Parallel/Perpendicular HW due tomorrow

  Pre-course Packet Due Friday*

  *Worth three homework grades

MORE VOCABULARY

Please Fill out Your Graphic Organizer!

Congruent Segments

- Definition: Congruent segments are two segments with the same length

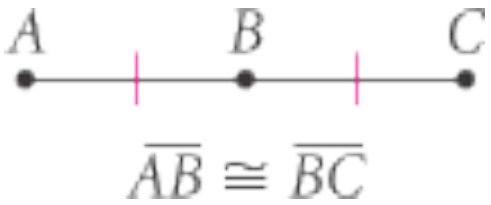
- Picture:

- Notation:

Midpoint

- **Definition:** A midpoint of a segment is a point that divides a segment into two congruent segments. A midpoint, or any line, ray, or other segment through a midpoint, is said to *bisect the segment*.

- Picture:



- Notation:

Angle

- Definition: An angle (<) is formed by two rays with the same endpoint. The rays are the *sides of the angle*. *The endpoint is the vertex of the angle*.

- Picture:

- Notation:

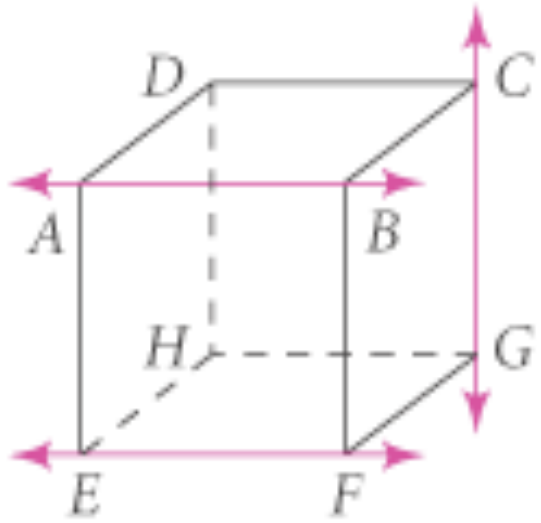
Congruent Angles

- Definition: Angles with the same measure
- Picture:
- Notation:

Newlywed Game!

Parallel Lines

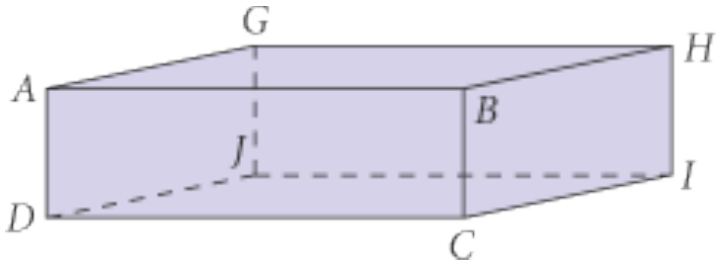
- Try to define parallel lines on your own



  - Definition: Parallel lines are coplanar lines that never intersect

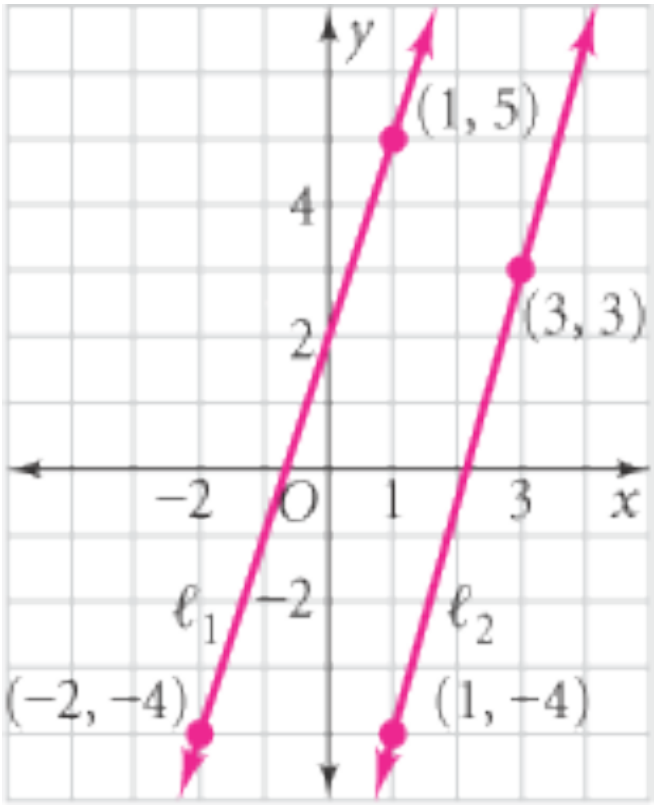
Definition

- Parallel Planes: Planes that do not intersect



Slopes of Parallel Lines

- Are these two lines parallel?



Parallel Lines

1. Is the line $2x - y = 4x + 8$ parallel to the line $2x + 7 + y = 0$?

Try on your own

1. Is the line $y = 4x - 7$ parallel to $10x - 5y = 15$?

Harder problem!

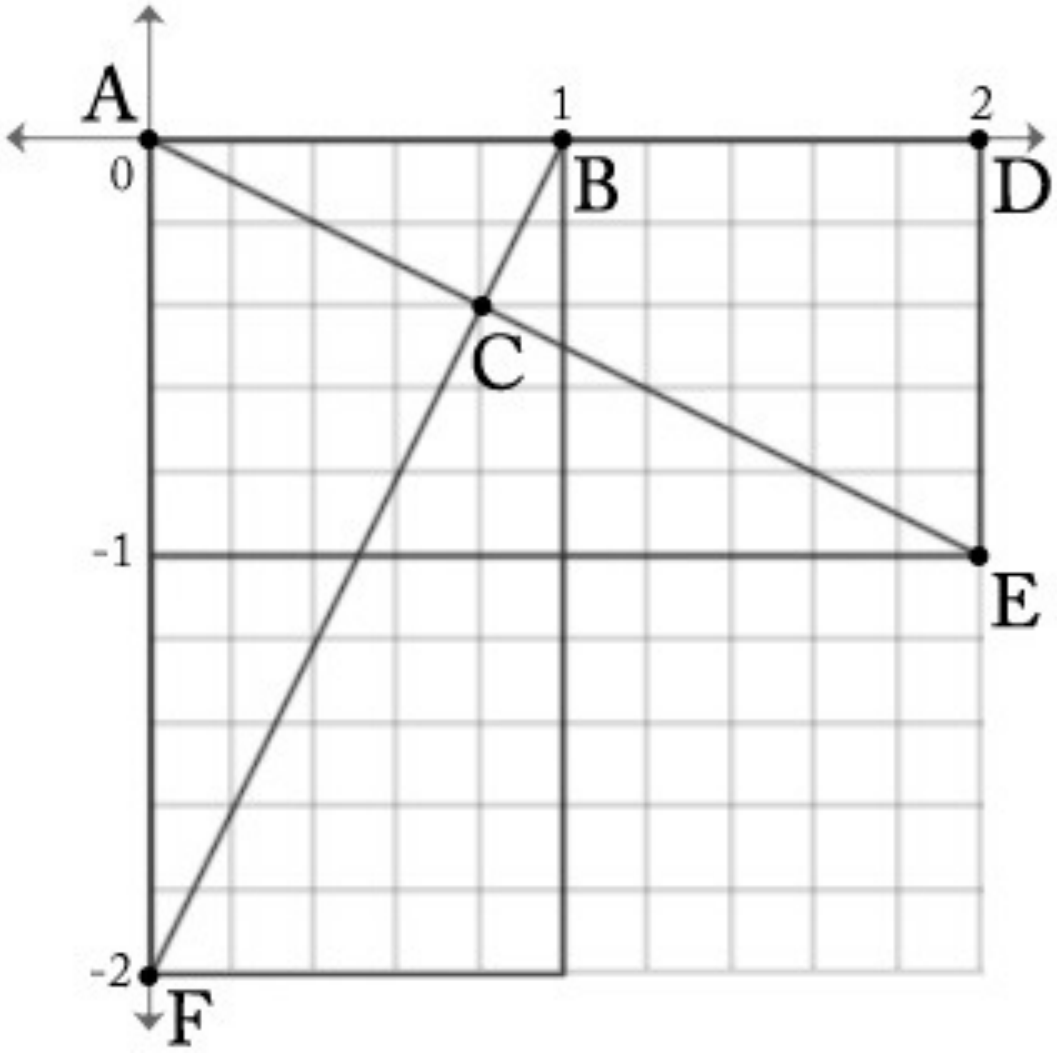
1. Write an equation for the line parallel to $y = -4x + 3$ that contains the point $(1, -2)$

Harder problem!

1. Write an equation for the line parallel to $y = -x + 3$ that contains the point $(3, 4)$

Need more practice?!?

Perpendicular lines!



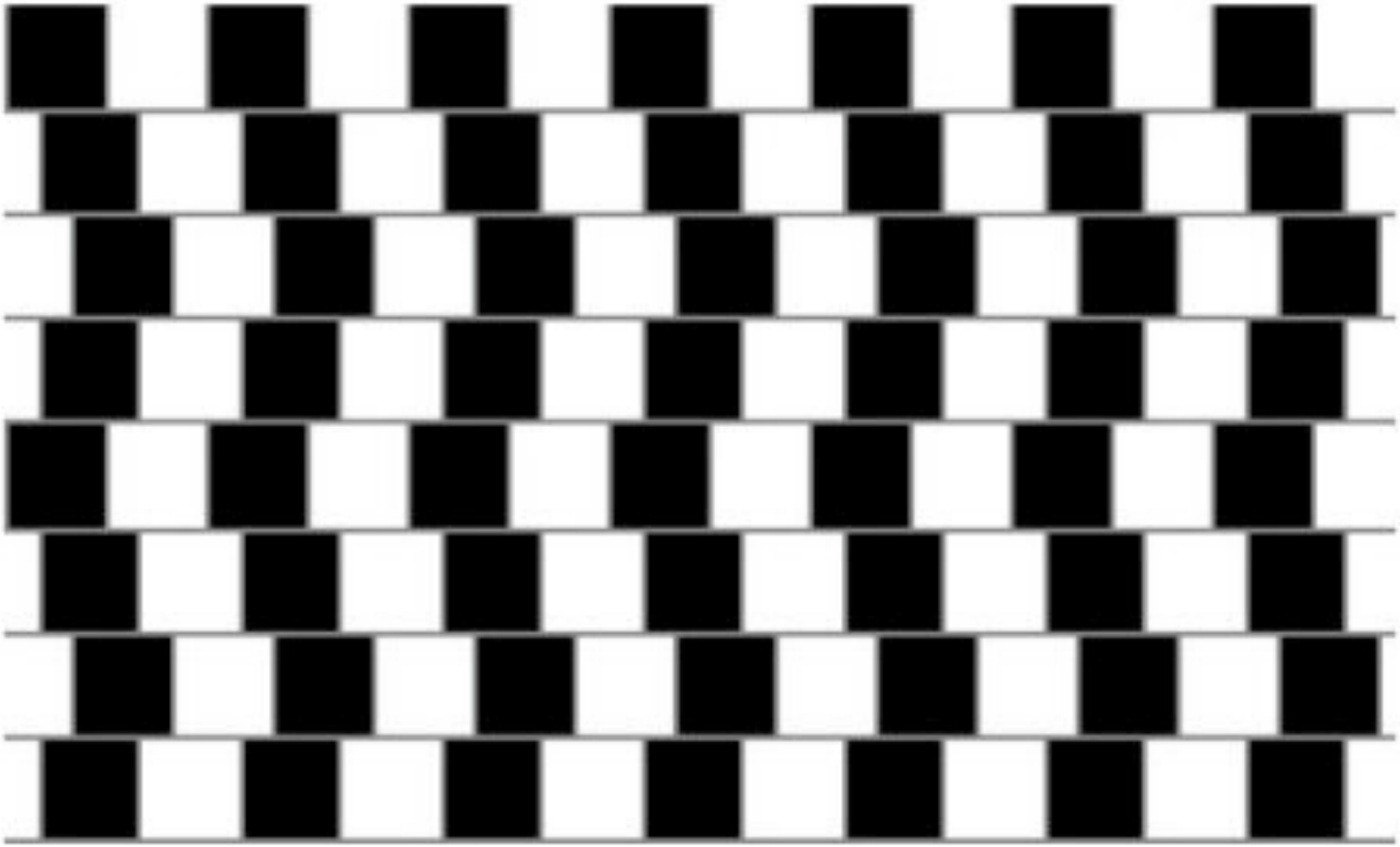
Can you do it!?!

1. Write the equation of a line that is perpendicular to the line $y = -1/3\ x + 5$ and goes through the point $(2,\ 9)$

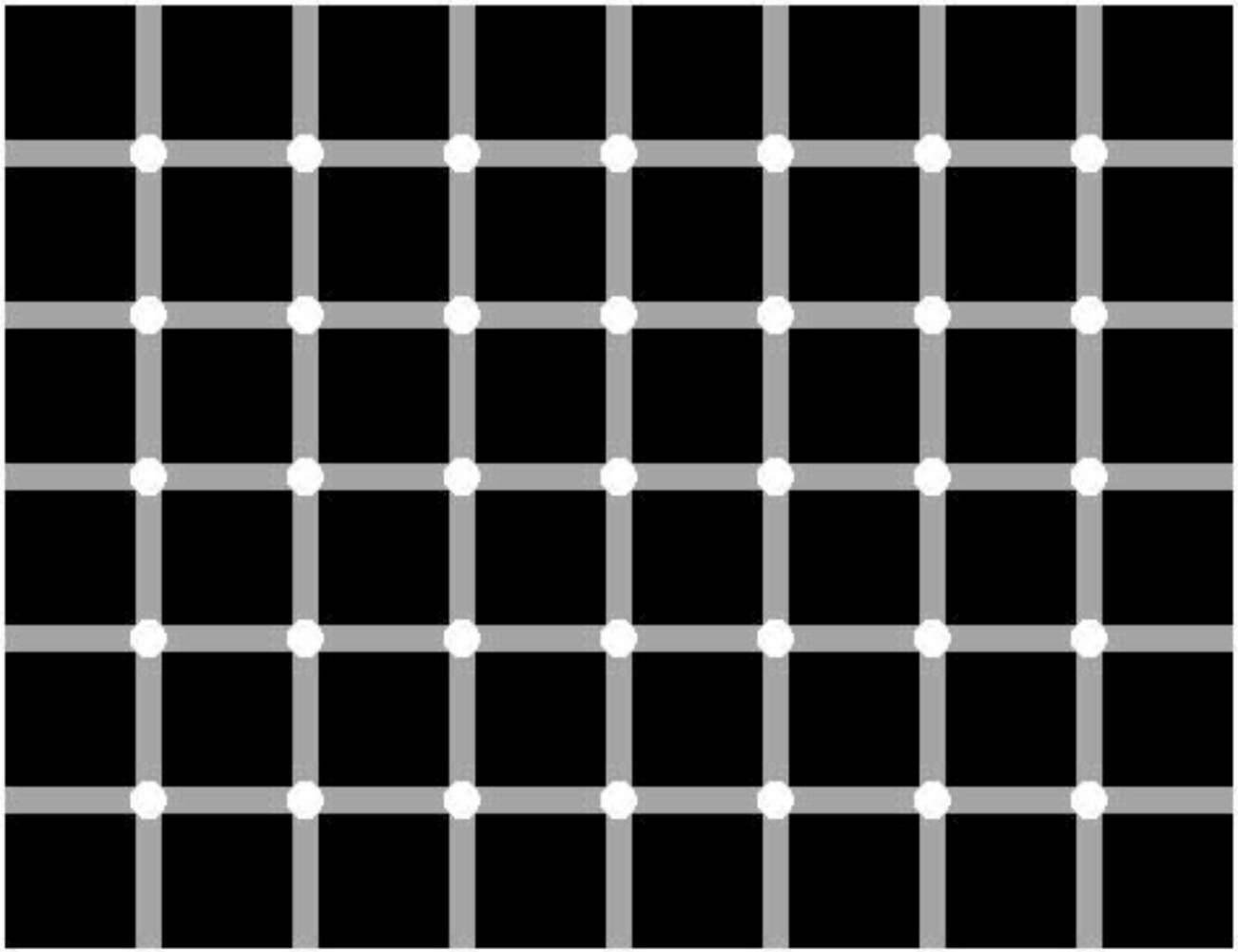
One more?!

1. Write the equation of a line that is perpendicular to the line $y = 1/4\ x + 6$ and goes through the point $(1, 2)$

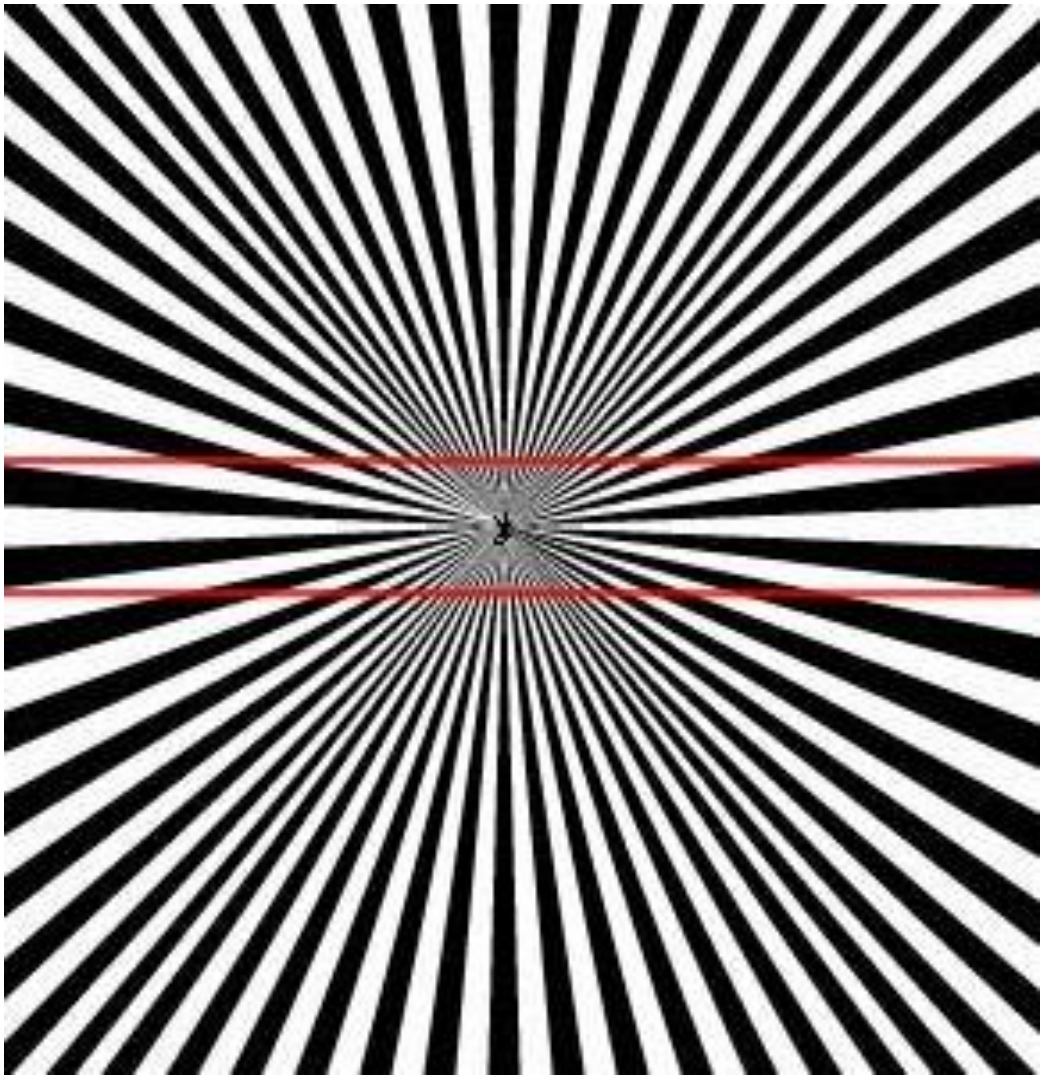
Parallel Line Optical Illusions



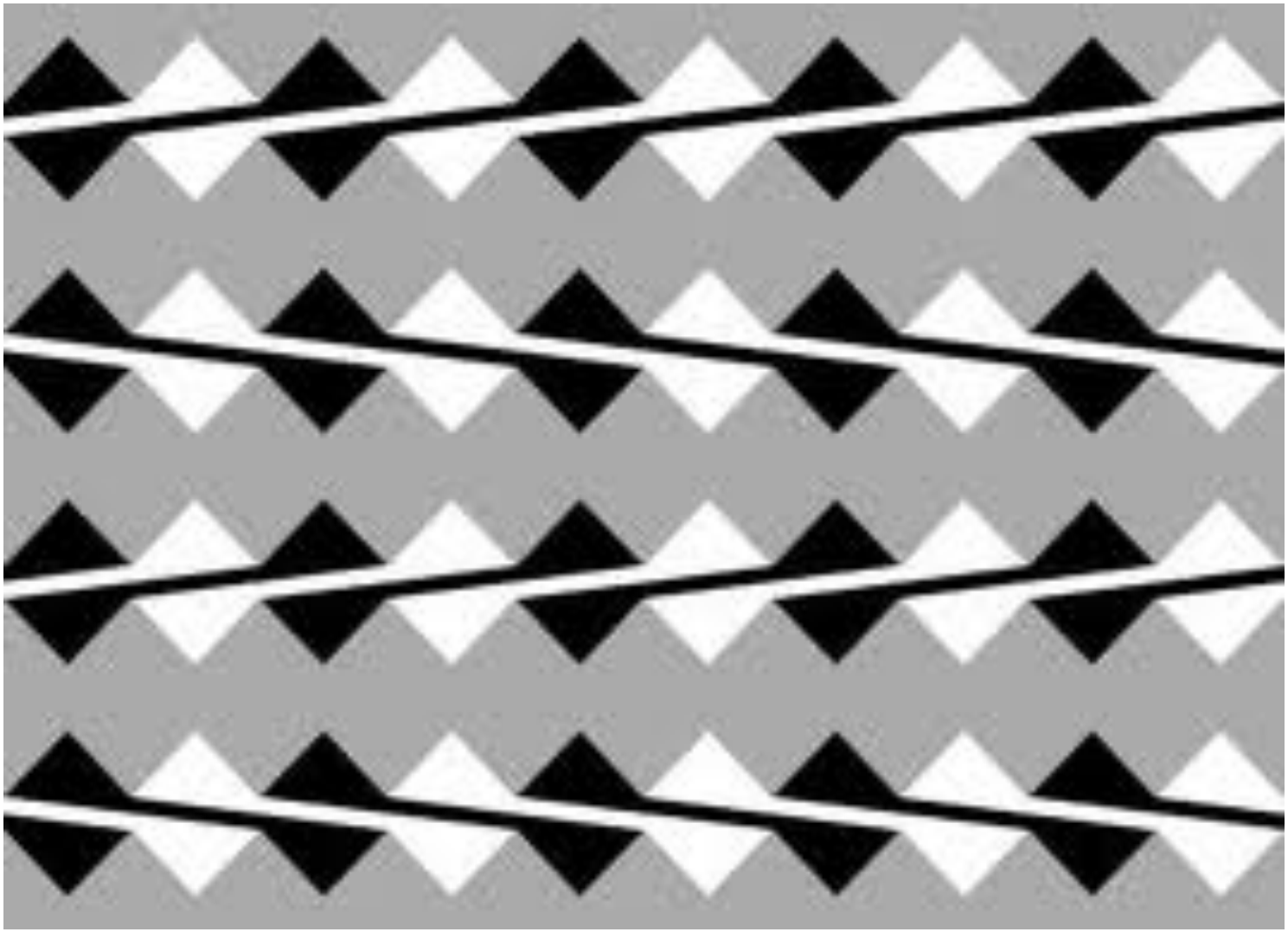
Illusion



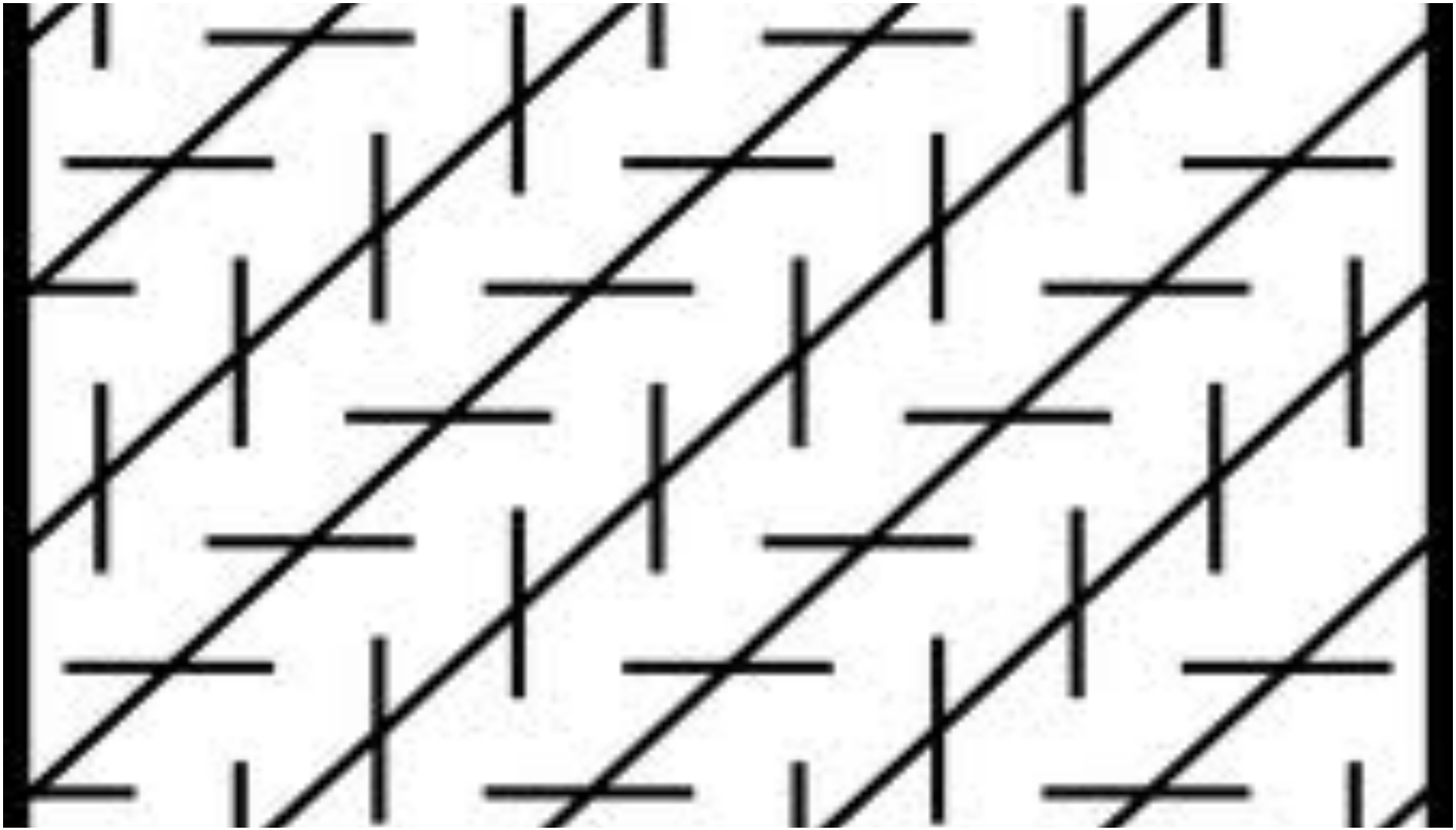
Illusion



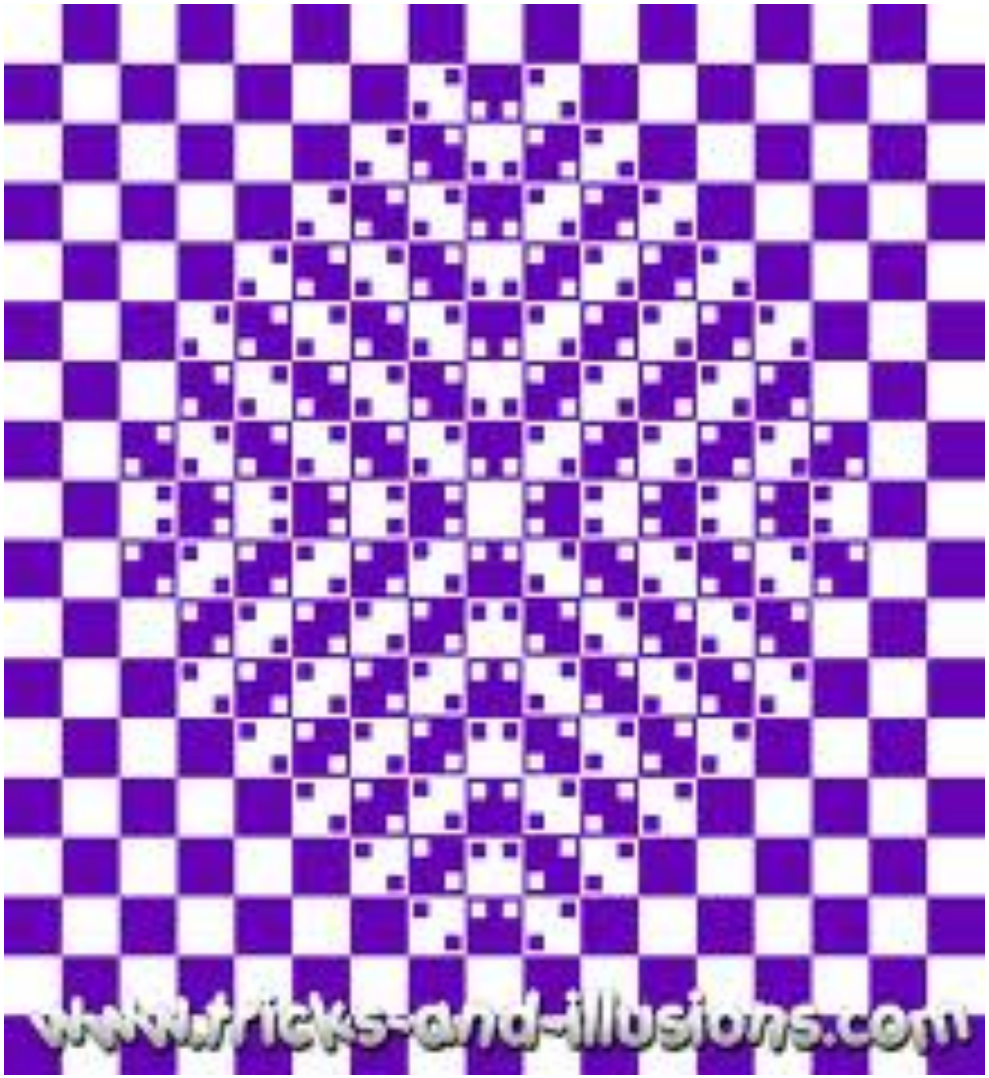
Illusion



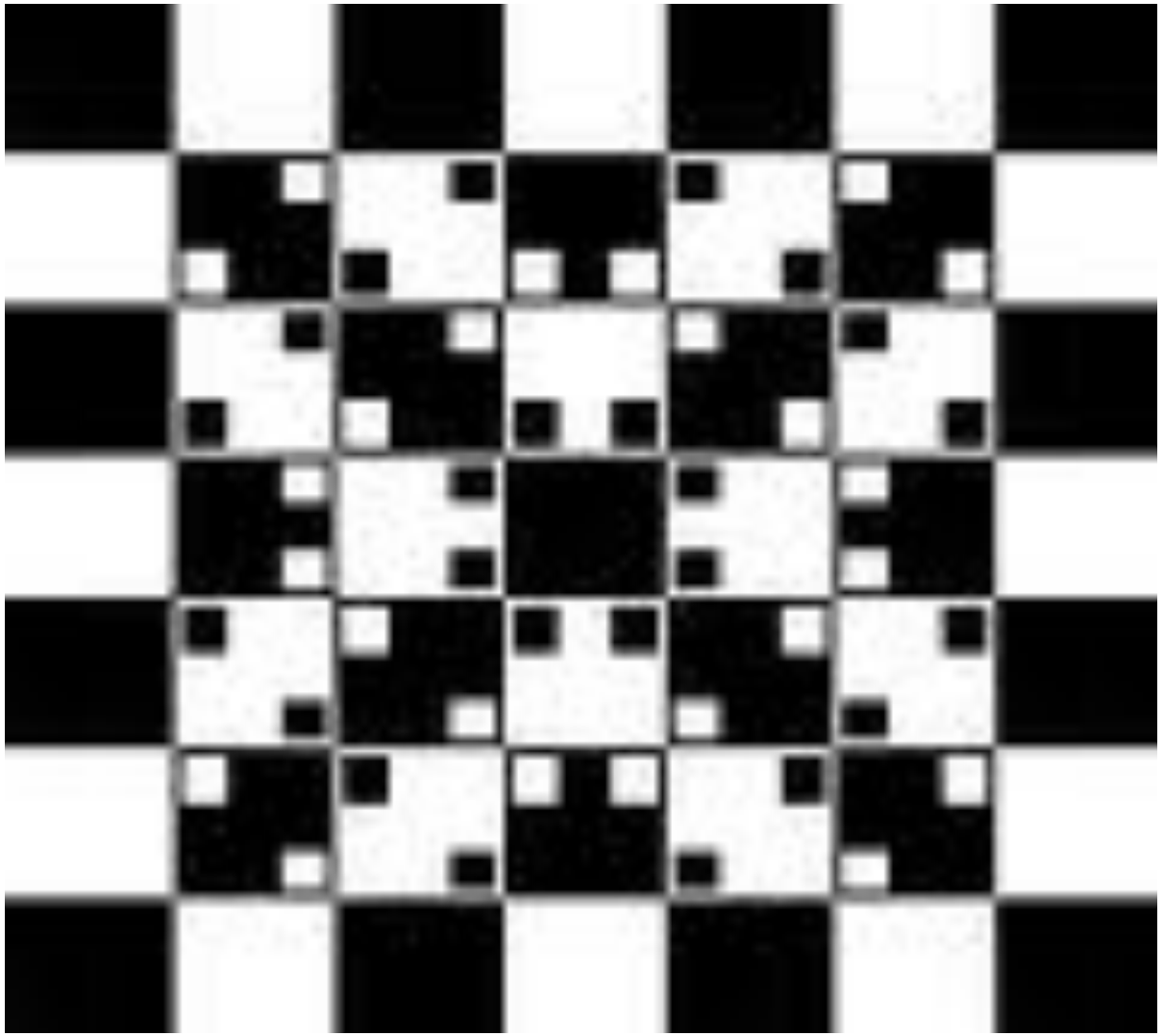
Illusion



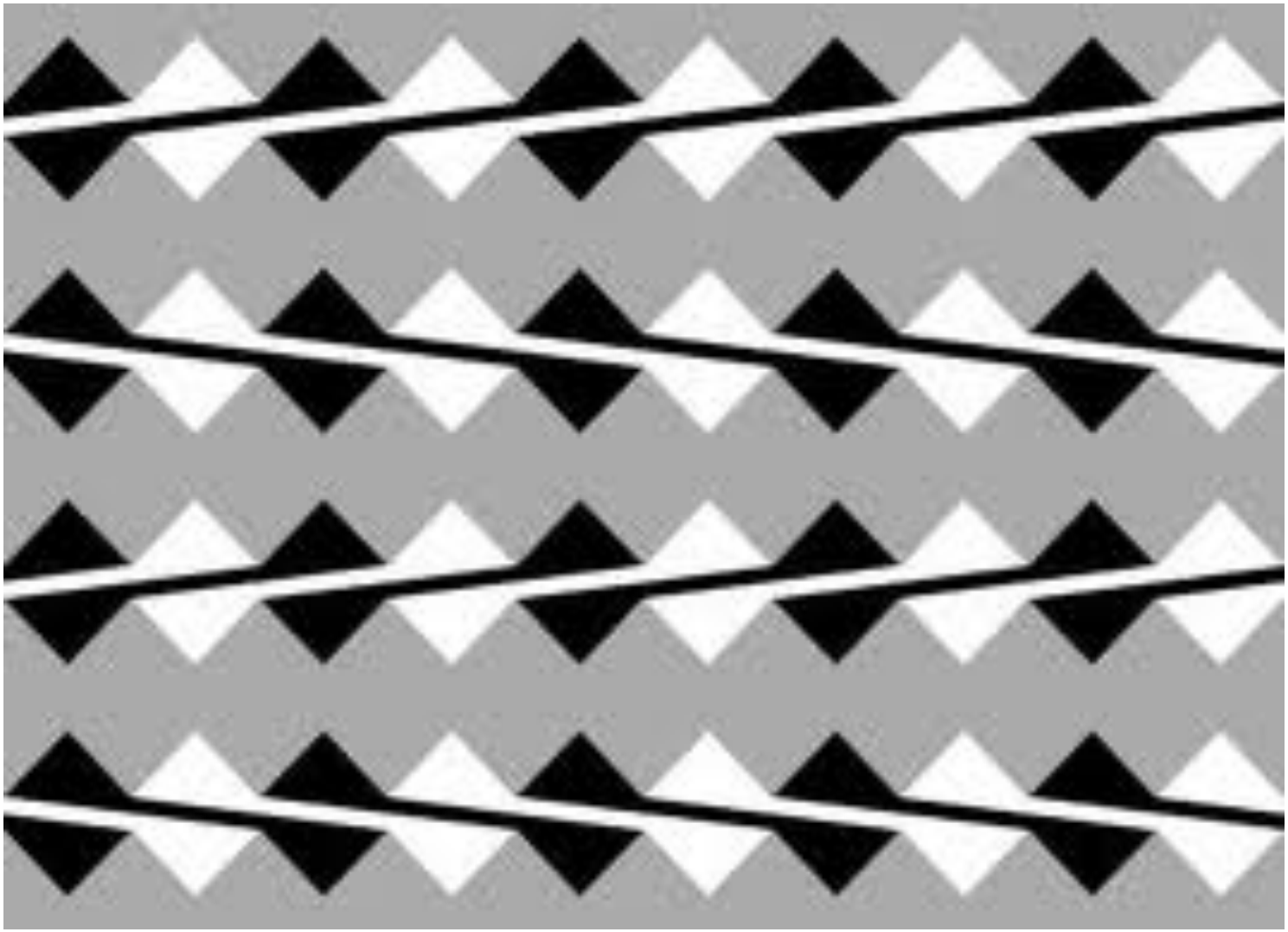
Illusion



Illusion



Illusion



Do Now

- Opposite rays are two collinear rays with the same endpoint. Draw opposite rays.

- Opposite rays always form a _____

Agenda

- HW Check
- Newlywed Game
- How good is your definition activity?

- HW: Parallel/Perpendicular HW 2 due tomorrow

  Pre-course Packet Due Tomorrow

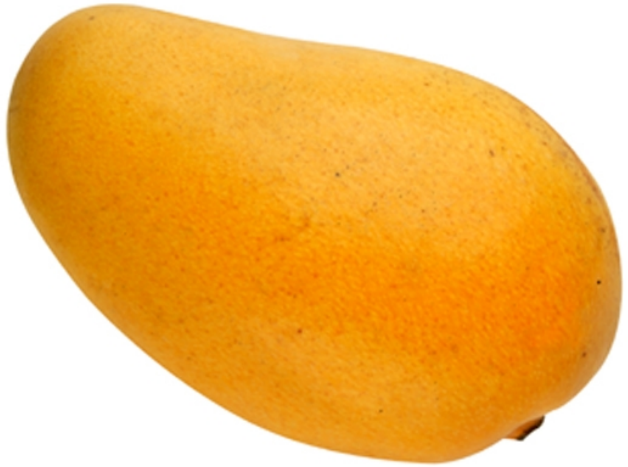
Homework!

Newlywed Game!

Definitions!

- Your definition must pick out one and only one thing!

Example: Give a bad definition of a mango



How good is your definition?

Define the following words:
(Must be able to hand in to me)

1) Circle
2) Polygon
3) Kite
4) Trapezoid
5) Isosceles Trapezoid
6) Parallelogram
7) Rectangle
8) Square

Definitions

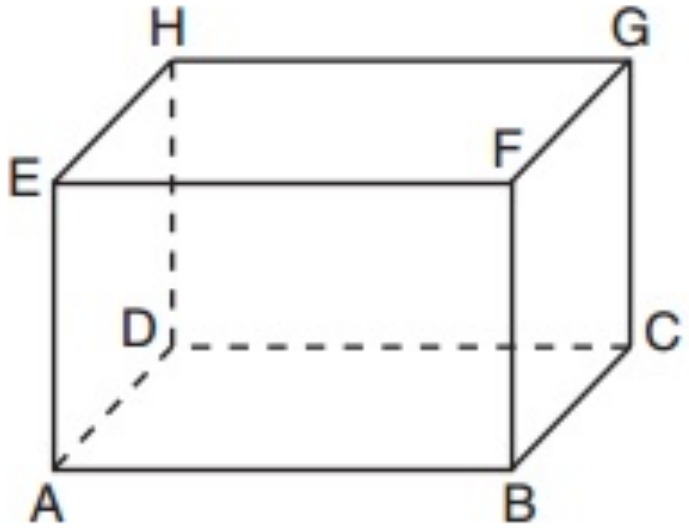
Term	Definition	Picture, given definition
Circle	The set of all points in a 2d plane that are equidistant from a center point.	
Polygon	A closed 2d figure with at least three sides, all non-intersecting.	
Kite	A four sided polygon with two pairs of congruent adjacent sides and no opposite sides congruent	
Trapezoid	A four sided polygon with exactly one pair of parallel sides	

Definitions

Isosceles Trapezoid	A trapezoid whose non parallel sides are congruent	
Parallelogram	A four sided polygon with two sets of parallel sides	
Rhombus	A parallelogram with four congruent sides	
Rectangle	A parallelogram with four right angles	
Square	A parallelogram with four right angles and four congruent sides	

Do Now

Skew lines are non-intersecting lines that are non-coplanar and go in different directions. Name three pairs of skew segments in the picture below.



Agenda

- HW Check (create an answer key in your groups)
- Finish Polygons Graphic Organizer
- Syllabus
- Flatland, the movie!

- HW: Bring in a compass by Monday OR bring in 10 dollars.

HW Check

- In your groups, compile an answer key for your homework. I will then read out the answers and we will go over any discrepancies you may have.

Polygons

Polygon Name:	Number of sides:	Picture
Triangle		
Quadrilateral		
Pentagon		
Hexagon		

Polygons

Septagon or Heptagon		
Octagon		
Nonagon		
Decagon		

Polygons

Dodecagon		
n-gon		

3 words to add to vocab

- Concave
- Convex
- Regular

Do Now

1. Define a square.

2. Define a trapezoid.

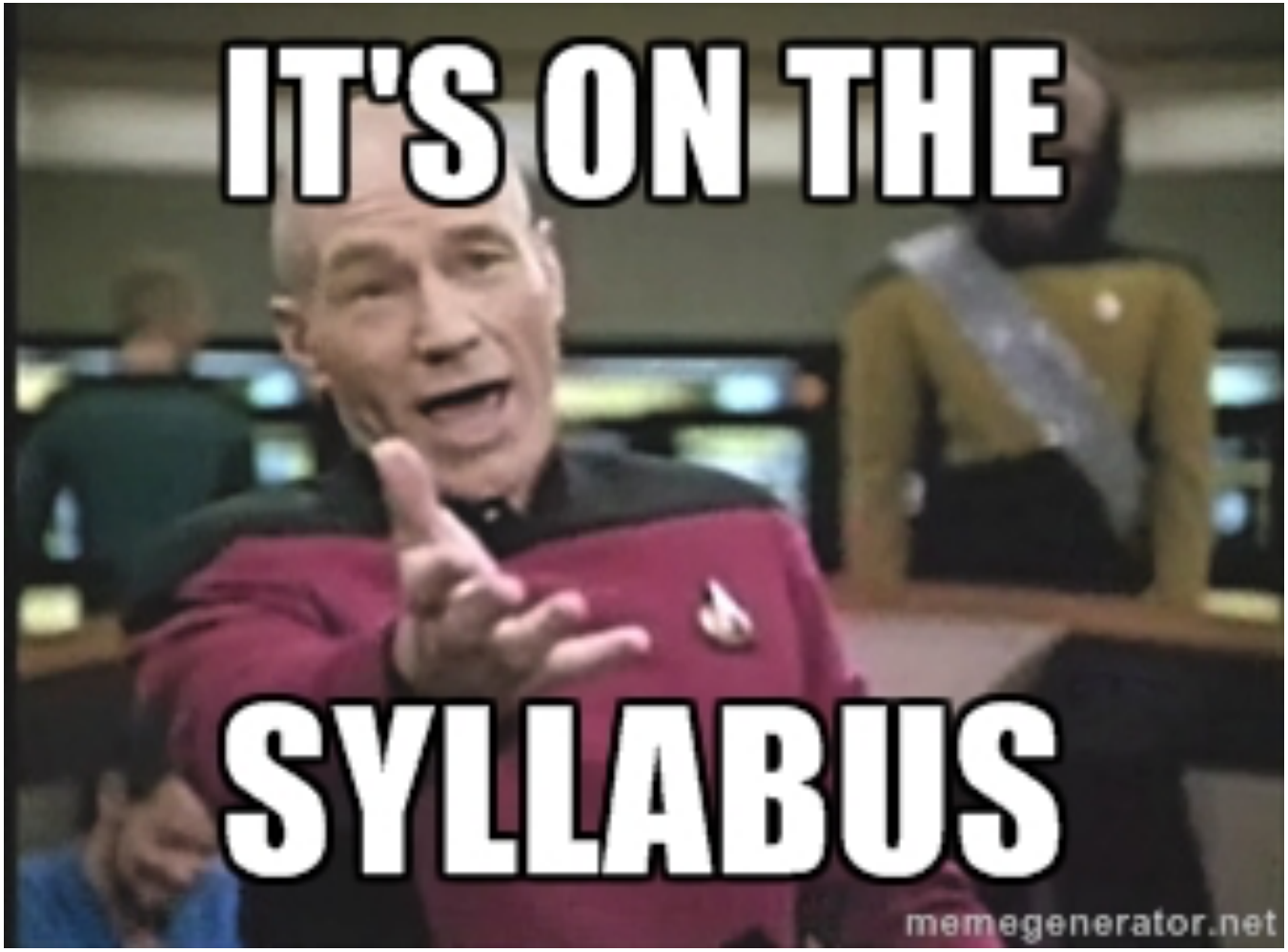
3. Draw a rhombus with proper markings.

Agenda

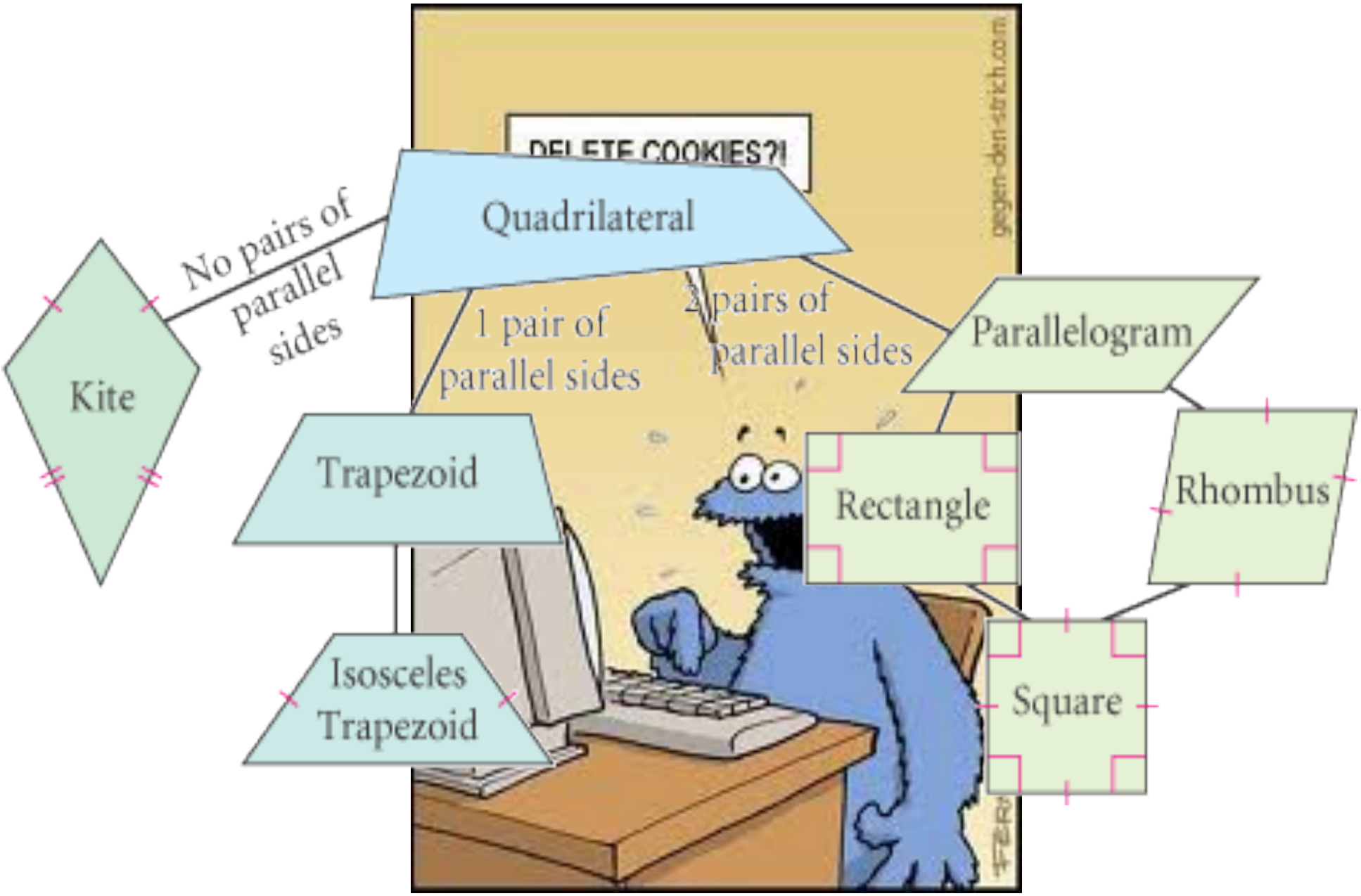
- Syllabus Conversation
- Sometimes, Always, Never
- Intro to Constructions
- Review Game (Press Conference Game)

- HW: Notation Worksheet

Syllabus!



Best picture of ALL time



SOMETIMES

ALWAYS

NEVER

Sometimes, Always, Never EXAMPLE

A rhombus is a parallelogram

Sometimes, Always, Never

A square is a parallelogram

Sometimes, Always, Never

A parallelogram is a quadrilateral

Sometimes, Always, Never

A quadrilateral is a rhombus

Sometimes, Always, Never

A rectangle is a parallelogram

Sometimes, Always, Never

A square is a rectangle

Sometimes, Always, Never

A trapezoid is a parallelogram

Sometimes, Always, Never

A quadrilateral is a square

Sometimes, Always, Never

A rhombus is a square

Sometimes, Always, Never

A rectangle is a parallelogram

Sometimes, Always, Never

A rectangle is a trapezoid

Sometimes, Always, Never

A kite is a quadrilateral

Sometimes, Always, Never

A kite is a parallelogram

Sometimes, Always, Never

A polygon is a quadrilateral

Sometimes, Always, Never

A quadrilateral is a regular polygon

Sometimes, Always, Never

A rhombus is a rectangle

Sometimes, Always, Never

A trapezoid is a kite

Sometimes, Always, Never

A parallelogram is a rhombus

Sometimes, Always, Never

A rectangle is a rhombus

Sometimes, Always, Never

A square is a parallelogram

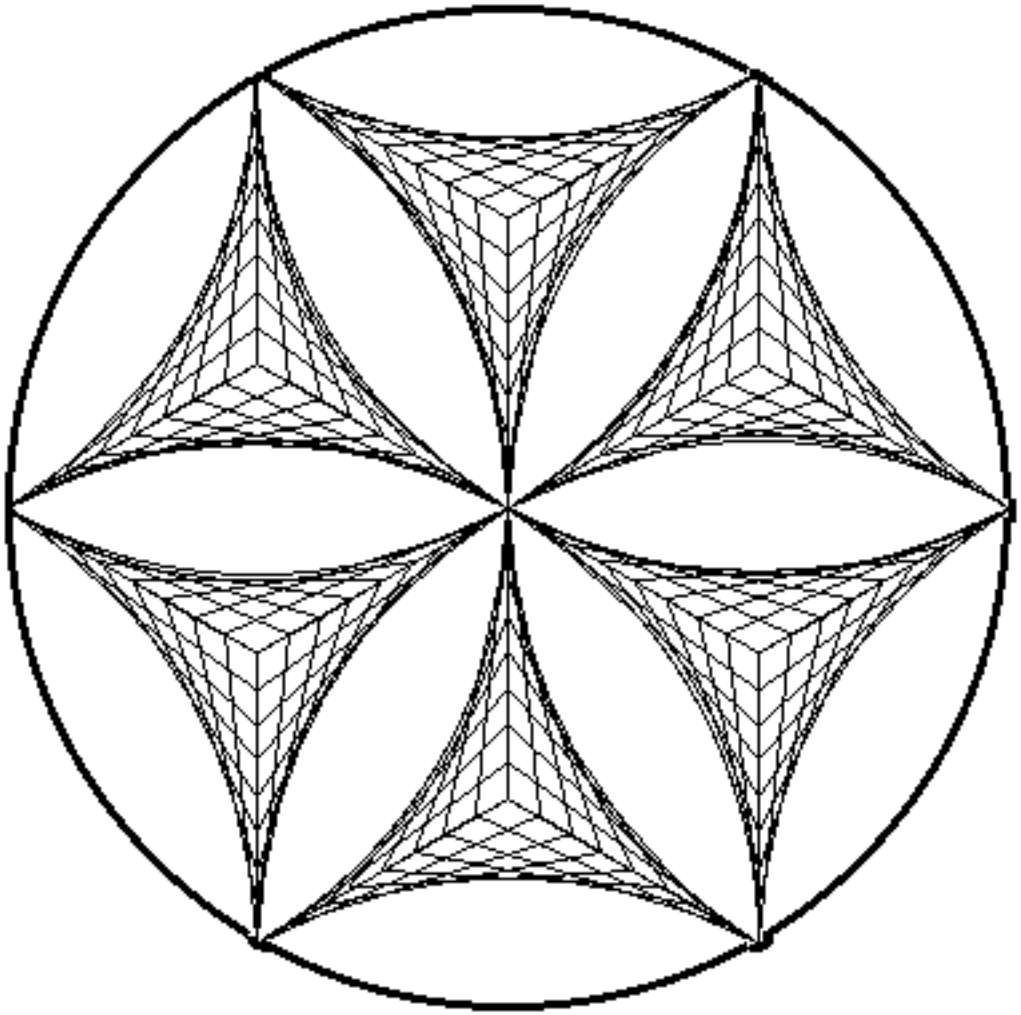
Sometimes, Always, Never

Geometry is AWESOME

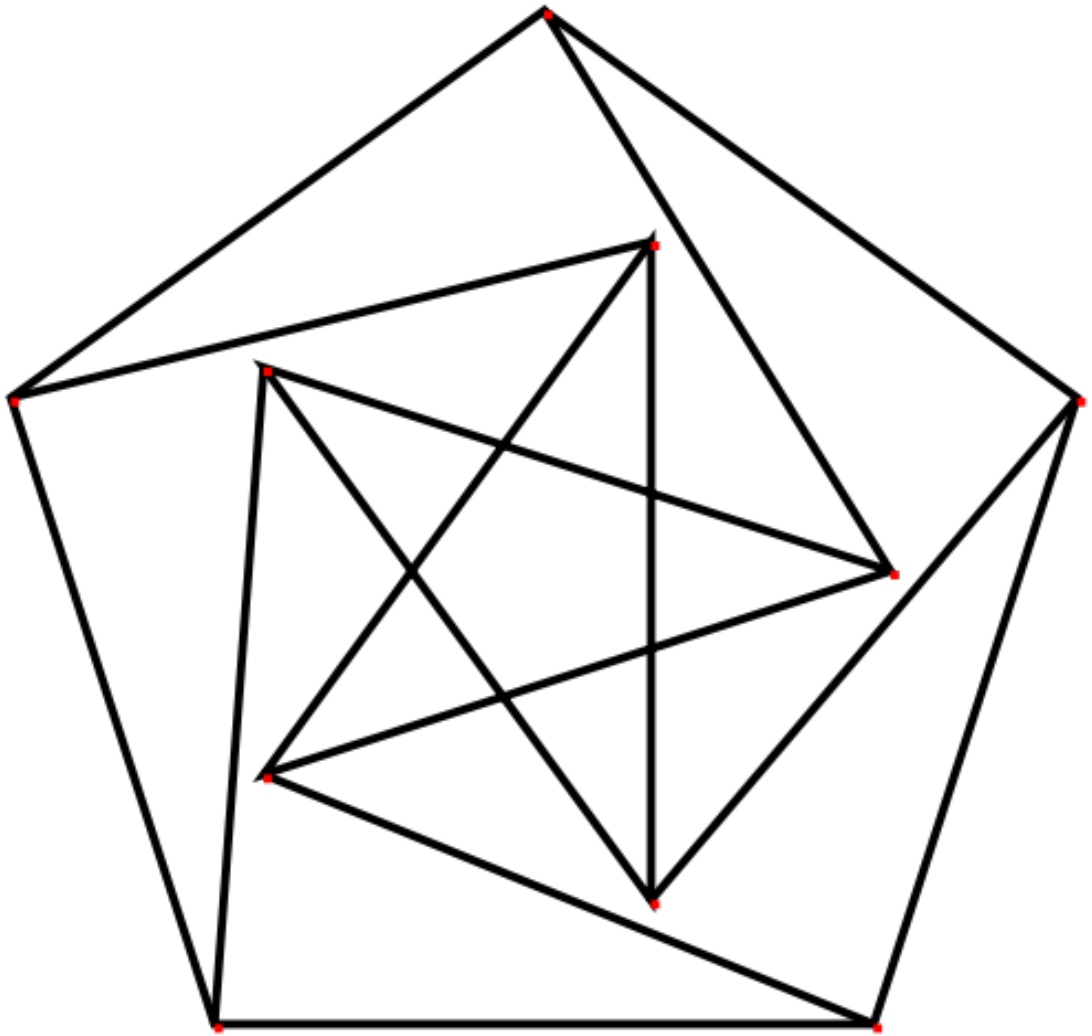
Sometimes, Always, Never

1) A rectangle is a kit
2) A kite is a quadrilateral
3) A polygon is a quadrilateral
4) A square is a parallelogram
5) A parallelogram is a square
6) A trapezoid is a parallelogram
7) A trapezoid is a quadrilateral

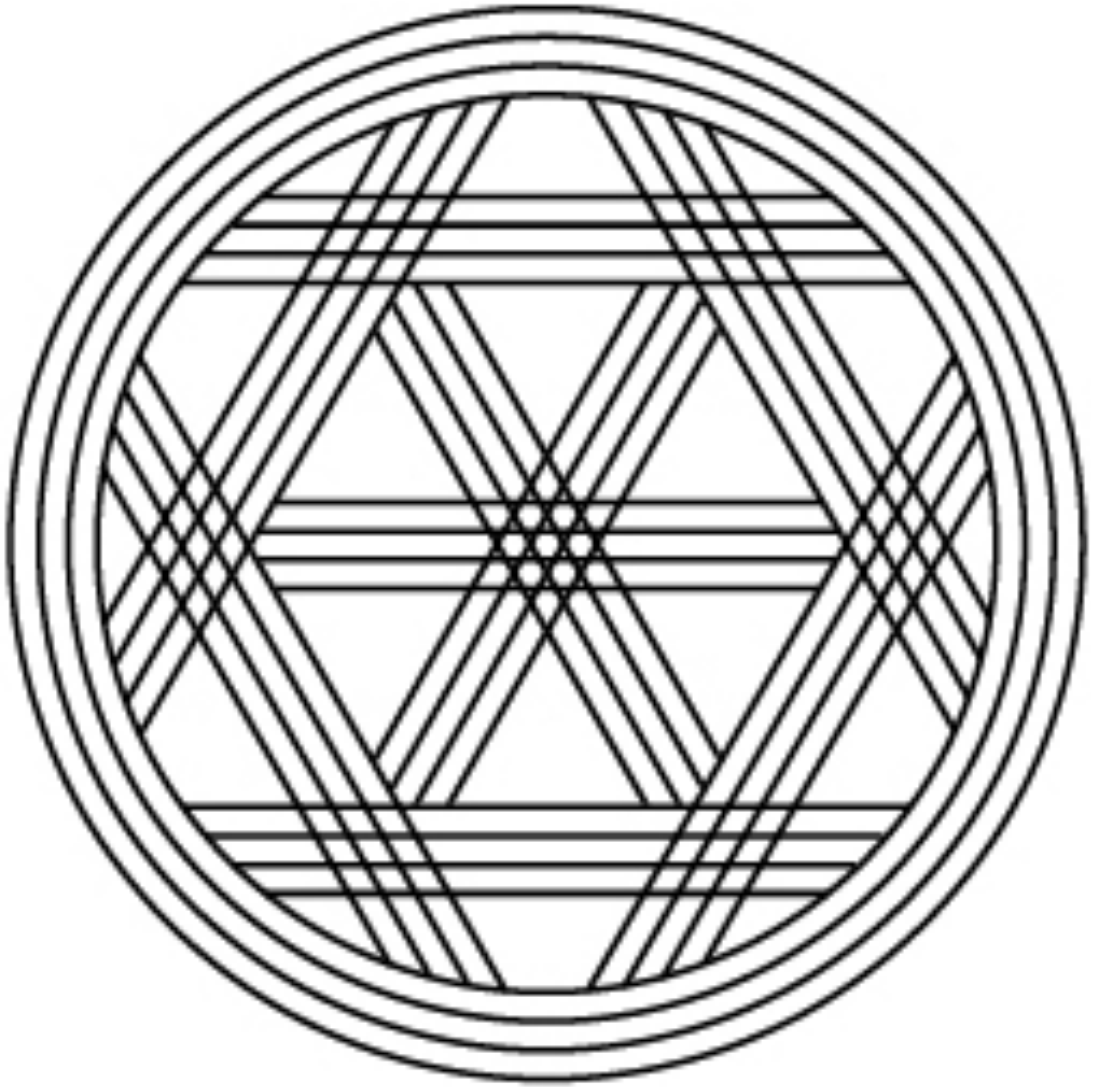
Constructions



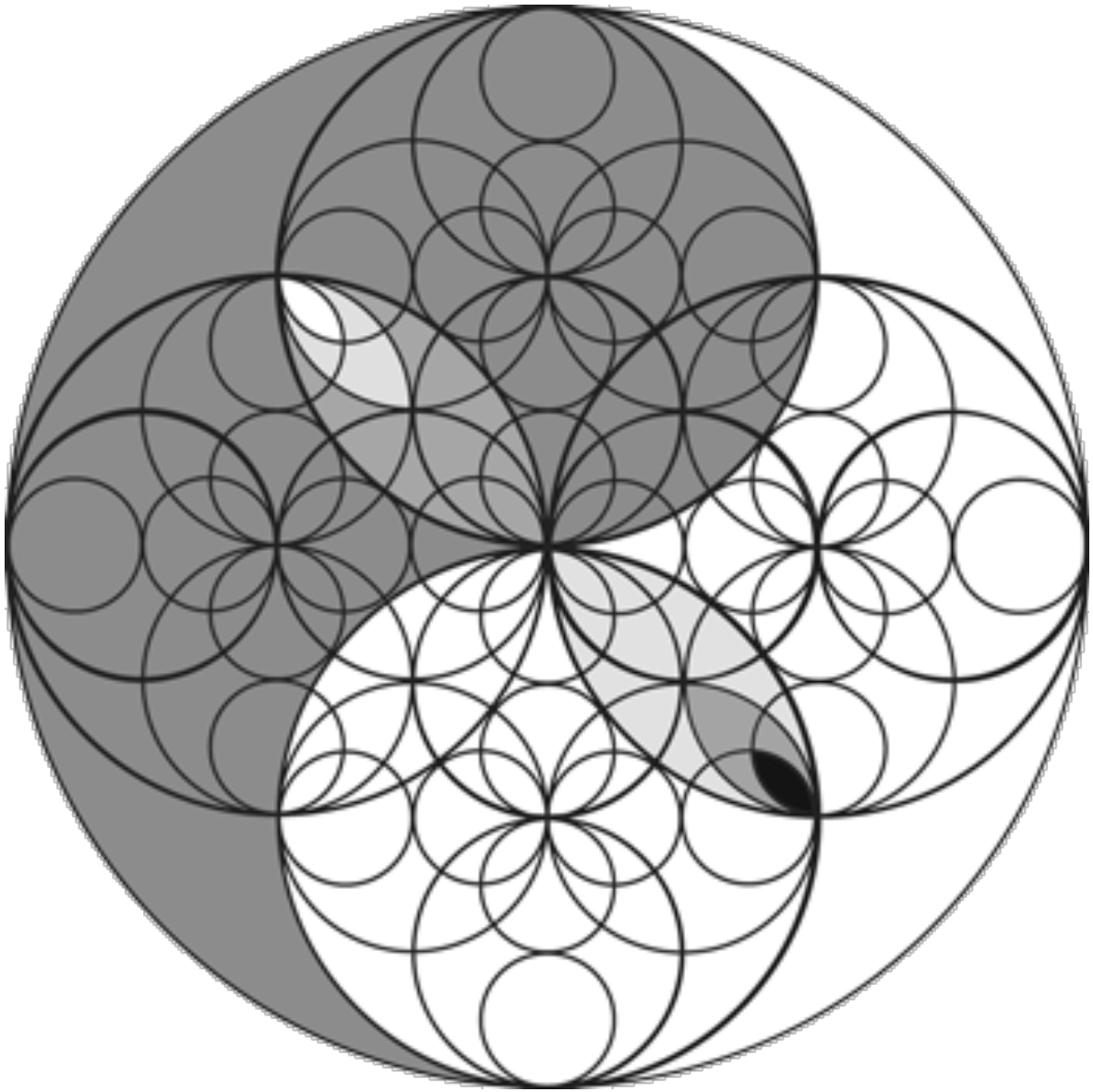
Constructions



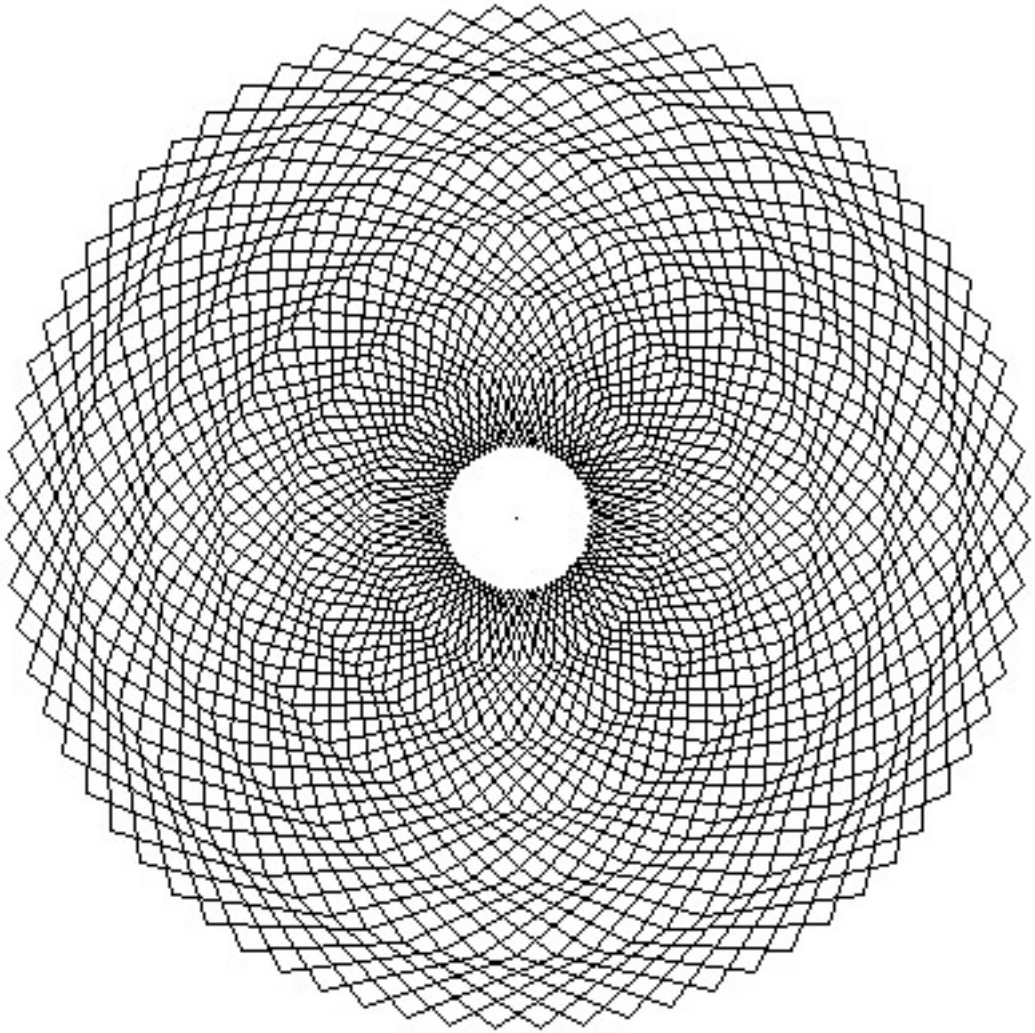
Constructions



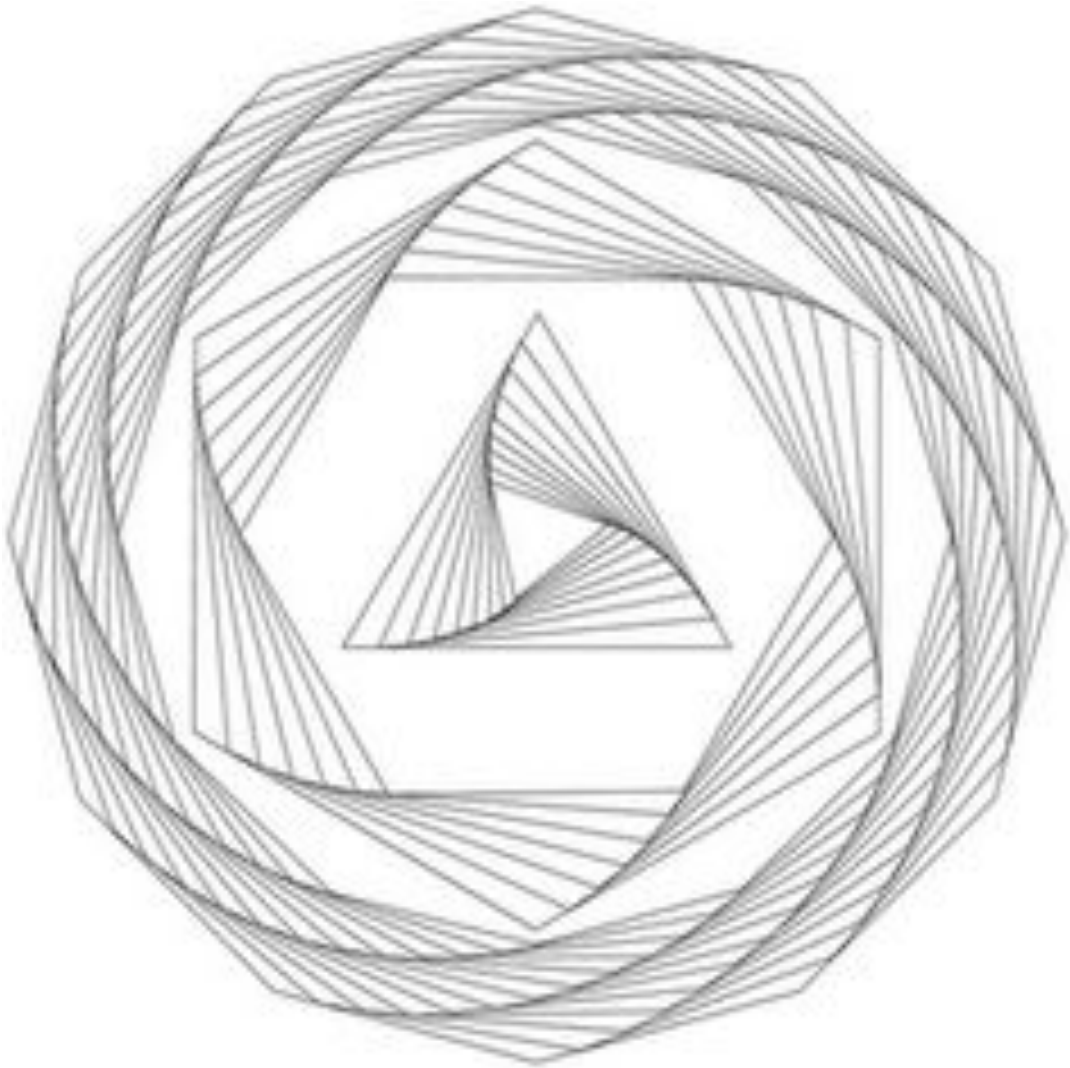
Constructions



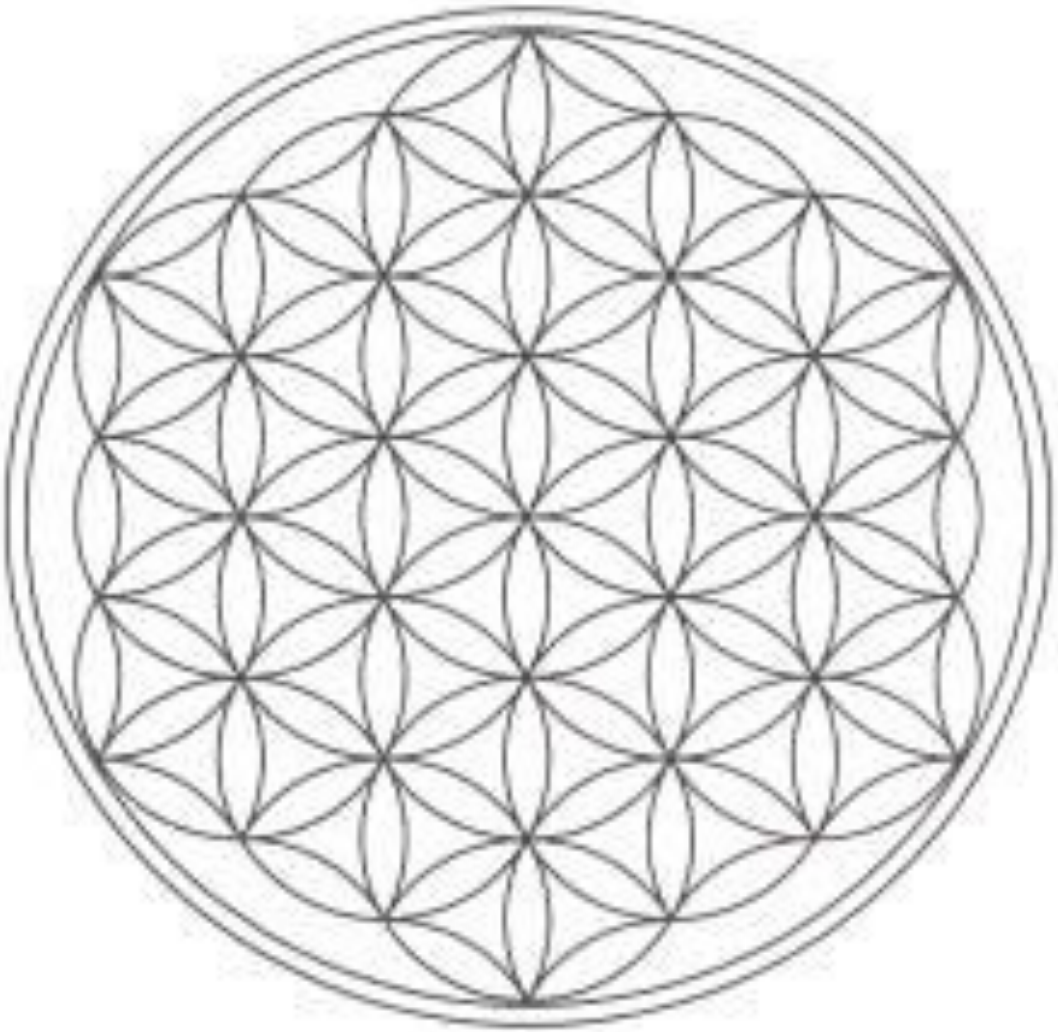
Constructions



Constructions



Constructions

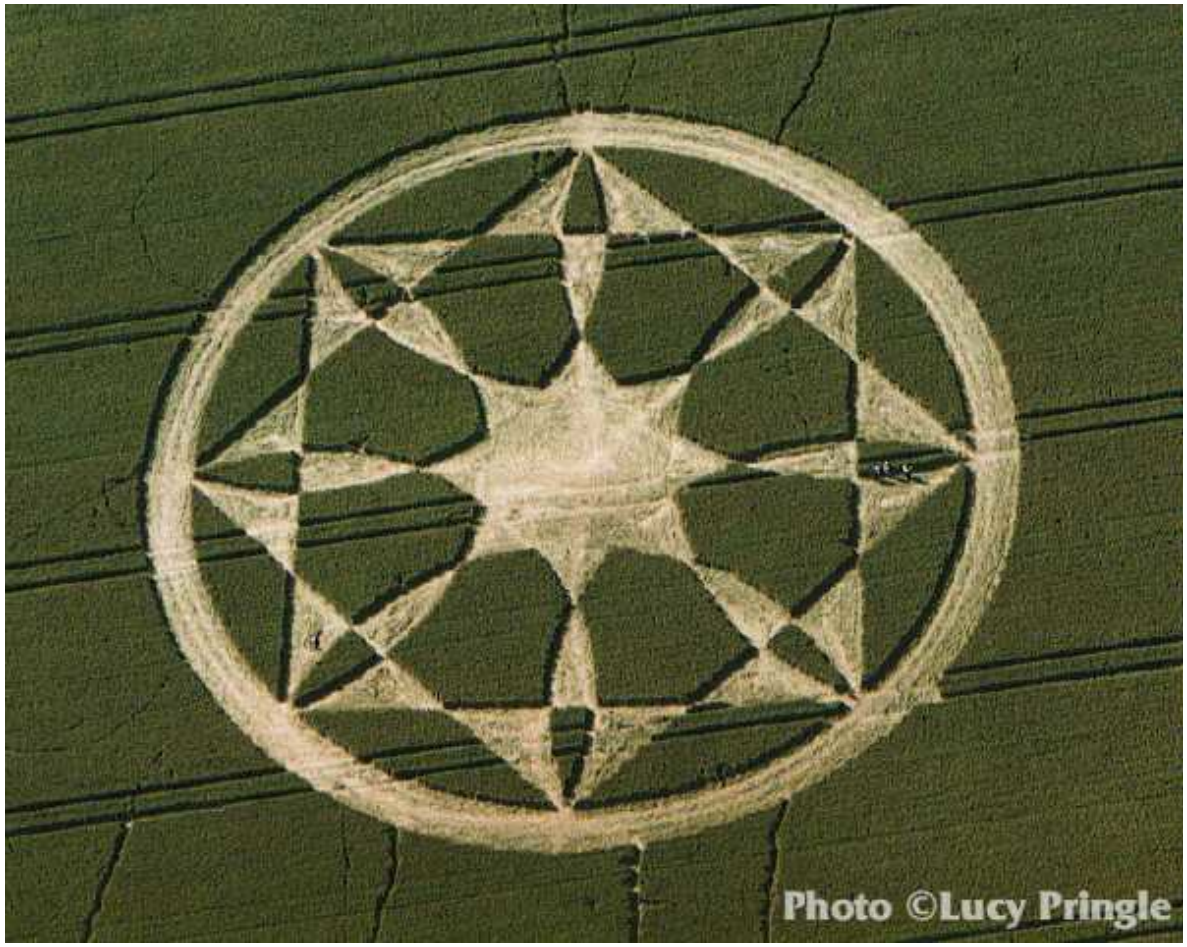


Constructions

Constructions

Constructions

Constructions



Constructions

Constructions

Constructions

Constructions

Constructions

Constructions

Press Conference Game

Do Now

1. Fill in the blanks

A _____ is a four sided polygon with NO pairs of parallel sides.

A _____ is a four sided polygon with one pair of parallel sides.

A _____ is a four sided polygon with two pairs of parallel sides.

2. Name three polygons that are parallelograms:

Equilateral Triangle?

Hexagon

Lab

Do Now

- Draw and notate the following:

Line CD is parallel to Line KT

Ray DF is perpendicular to line ST

Segment KT is congruent to segment TP

Plane LTM

Agenda

- Quiz
- Constructions
- Fun designs!

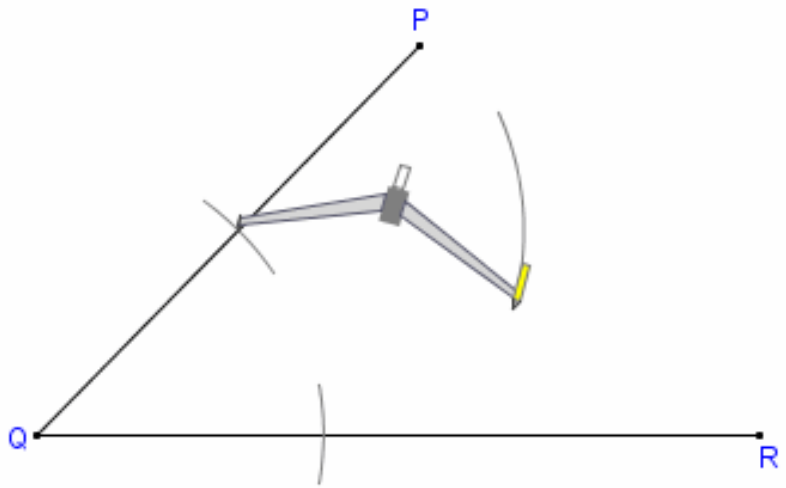
- HW: Show practice of the following:
  - 2 Equilateral Triangles
  - 2 Hexagons
  - 2 Perpendicular Bisectors
  - 1 Angle bisector

Quiz

Constructions

1) Rules of Construction

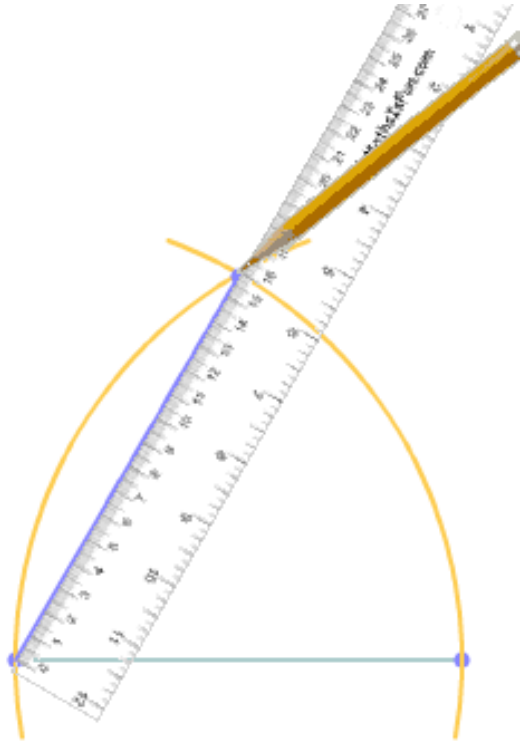
1)You may only use a compass and a straight edge (ruler)
2)You can start a construction by drawing a line and/or point.
3)You can draw segments from any point to another point
4)You can produce circles or arcs using the compass



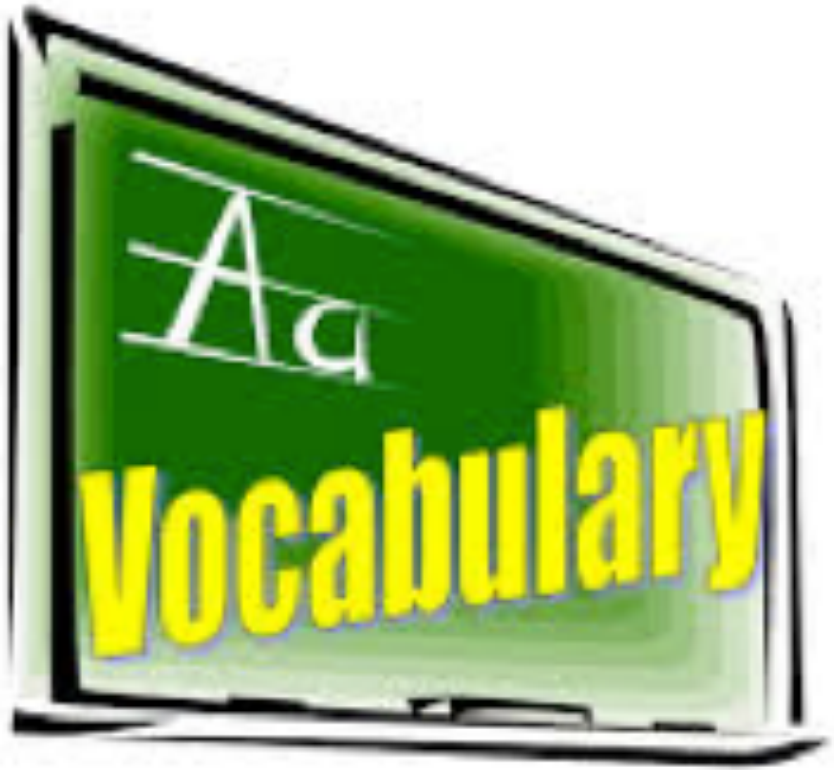
Constructions-Two great websites

https://www.mathsisfun.com/geometry/constructions.html

http://www.mathopenref.com/constructions.html



VOCABULARY



VOCABULARY

TERM	DEFINITION	PICTURE
Equilateral Triangle		
Perpendicular Bisector		

VOCABULARY

Angle Bisector		
Inscribe		
Tangent		

Do Now

Construct a perpendicular bisector. Start by drawing a segment

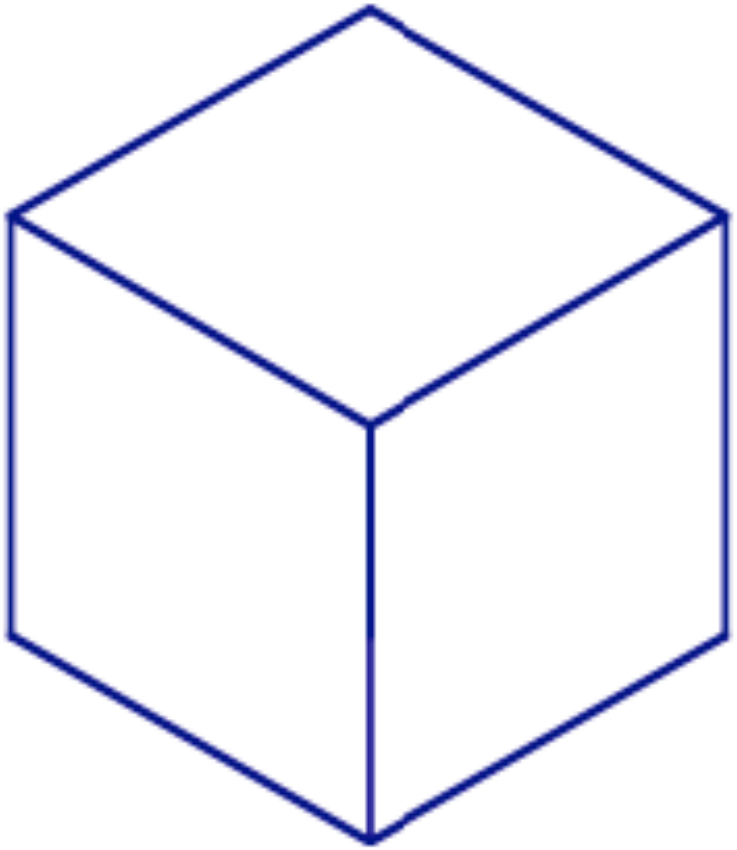
Agenda

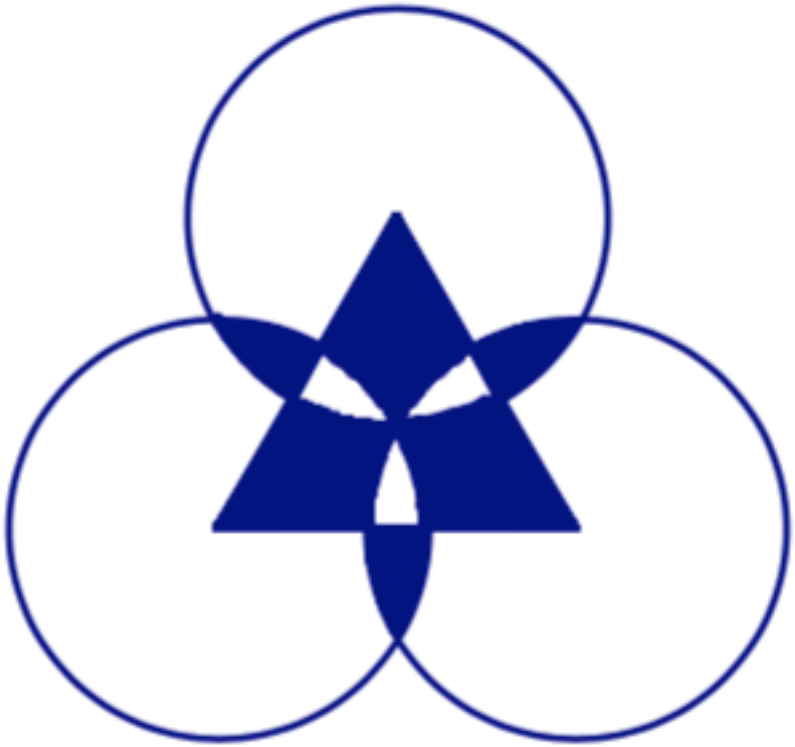
- HW Check
- Finish Constructions Packet
- Fun designs!
- Intro to Project
- Work on project (if time)

- HW: Non, but feel free to work on your project!

Pretty Designs!!

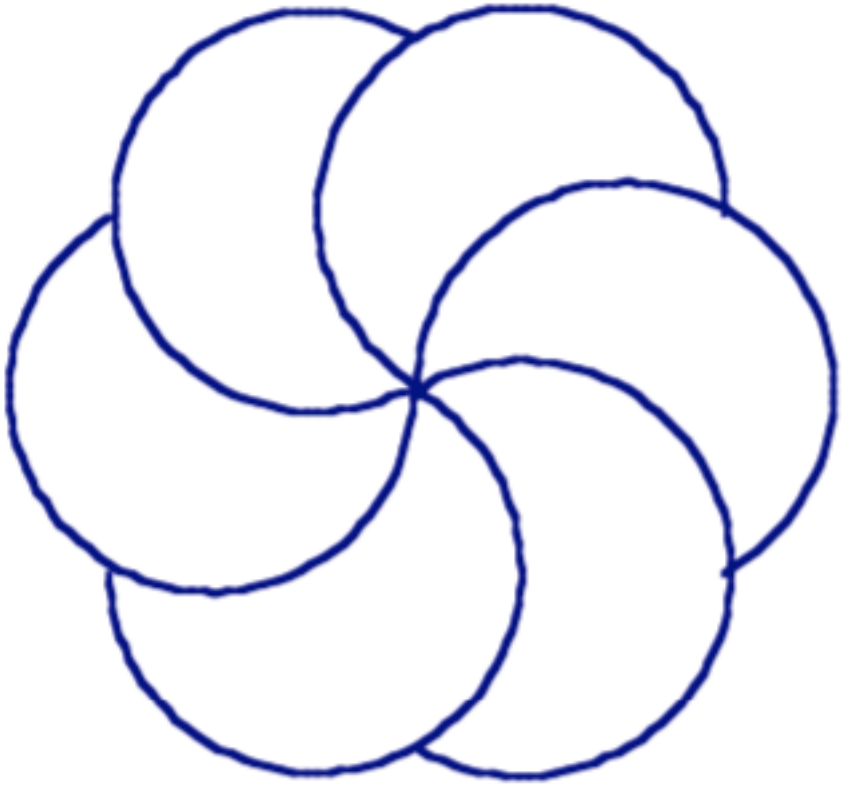
Link





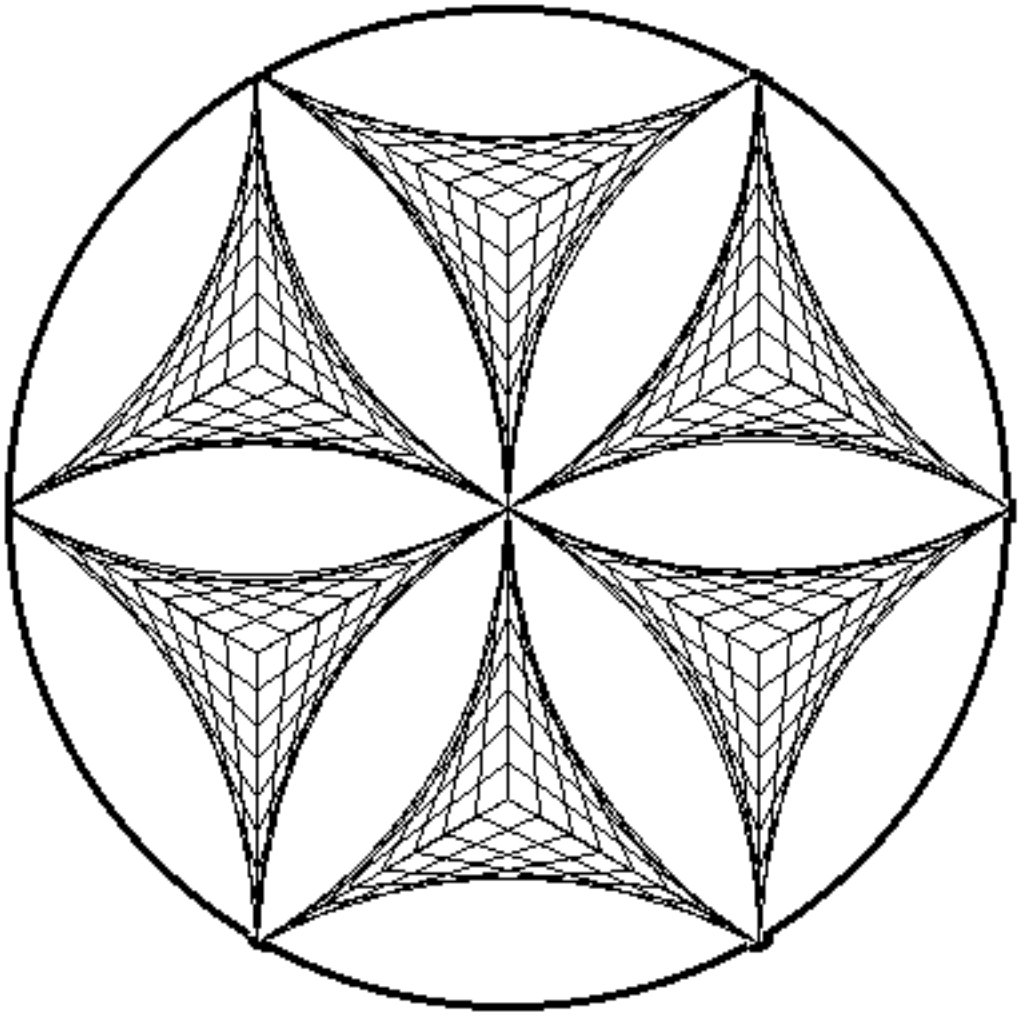
Pretty Designs!!

Link



Pretty Designs!!

Link



Pretty Designs!!

Link