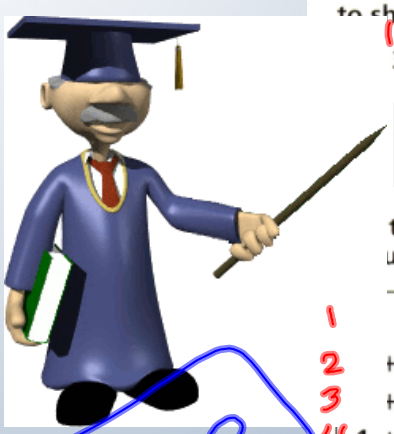
Here is your warm-up ...

Lesson Quiz Lesson 1-1

Find a pattern for each sequence. Use the pattern to show the next two terms or figures.

3, −6, 18, −72, 360



the table and inductive reasoning. Make a conjecture ut each value.

1	$= 1$	$= \frac{1 \cdot 2}{2}$
2	$1 + 2 = 3$	$= \frac{2 \cdot 3}{2}$
3	$1 + 2 + 3 = 6$	$= \frac{3 \cdot 4}{2}$
4	$1 + 2 + 3 + 4 = 10$	$= \frac{4 \cdot 5}{2}$

3. the sum of the first 10 counting numbers

4. the sum of the first 1000 counting numbers

Show that the conjecture is false by finding one counterexample.

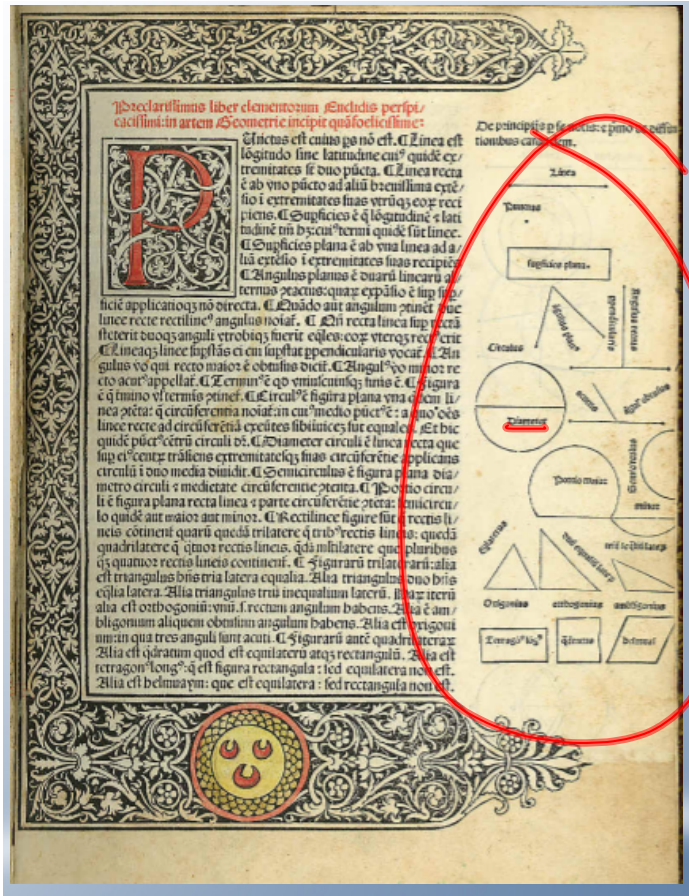
5. The sum of two prime numbers is an even number.

Building blocks of Euclidean geometry

- Points
- Lines
- Planes

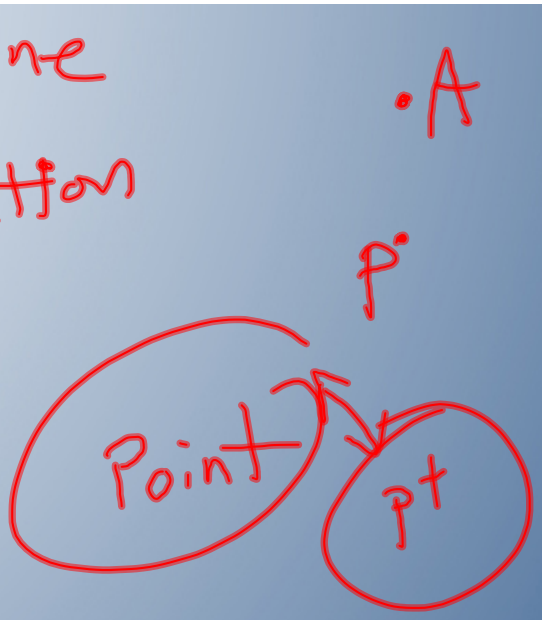
What does ***Euclidean*** mean?

- Euclid - ancient Greek mathematician
- ~ 300BC
- Wrote book series: *The Elements*
- Books 1-6 are on plane geometry (Euclidean)



Point

- Basic unit of geometry
- Has no size
- Drawn as a small dot
- Named by a capital letter
- Is ***undefined*** in Euclidean geometry

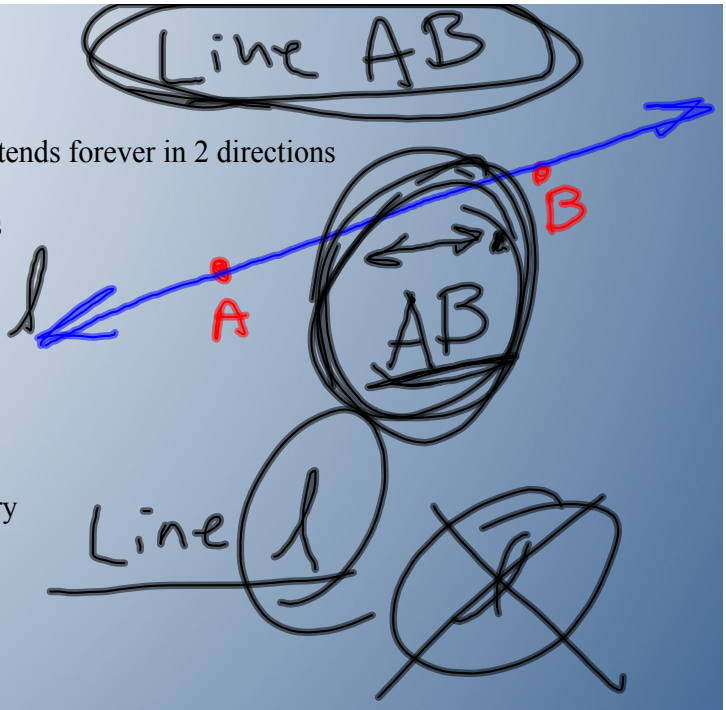


Space

- The collection of ***all*** points

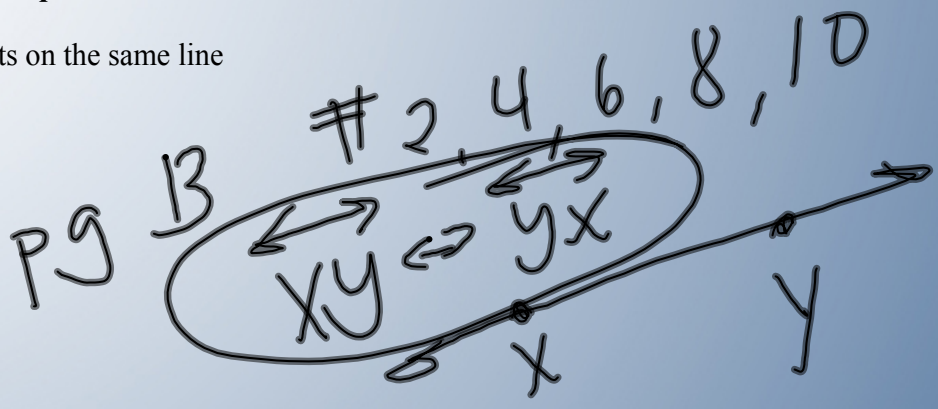
Line

- Straight arrangement of pts that extends forever in 2 directions
- Has infinite length but no thickness
- Named by: (2 different ways)
    * Any 2 pt on a line
    * A lower case letter
- Is ***undefined*** in Euclidean geometry



Collinear points

- Points on the same line



Plane

- A flat surface that extends forever
- Has no thickness
- Named by: (2 different ways)
    * At least 3 of its noncollinear pts
    * A single capital letter
- Is ***undefined*** in Euclidean geometry

Coplanar

- Objects (lines, points, geometric shapes, etc) that line in the same plane

Axiom / Postulate → conjecture

- An accepted statement of fact
- Also known as a ***postulate***

↓ true

theorem

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Consider 2 points ... any 2 ...

Post 1-4

- What statements can you make?
- What conclusions can you draw?
- ...use our point/line/plane terminology...
- How do they relate to the other types of figures?

Consider 2 lines... any 2 ...

- What statements can you make?
- What conclusions can you draw?
- ...use our point/line/plane terminology...
- How do they relate to the other types of figures?

Post 1-2

Consider 2 planes... any 2 ...

- What statements can you make?
- What conclusions can you draw?
- ...use our point/line/plane terminology...
- How do they relate to the other types of figures?

Post 1-3

Post 1-4

Consider 3 noncollinear points ... any 3 ...

- What statements can you make?
- What conclusions can you draw?
- ...use our point/line/plane terminology...
- How do they relate to the other types of figures?

Post 1-1

Postulate 1-1

- Through any two points there is exactly one line.

Postulate 1-2

- If two lines intersect, then they intersect in exactly one point.

Postulate 1-3

- If two planes intersect, then they intersect in exactly one line.

Postulate 1-4

- Through any three noncollinear points there is exactly one plane.

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1-43 odd
47-71 odd
74
76