

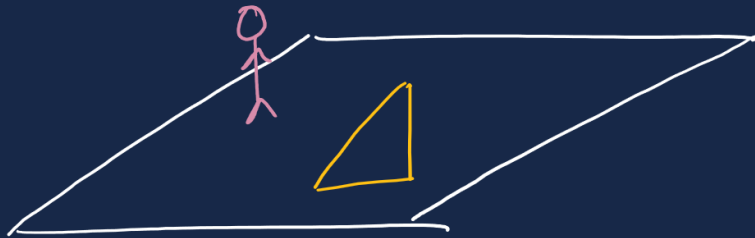
June 20, 2021

DIFFERENT SOURCES OF GEOMETRY.

DR. RADHIKA GUPTA
ON THURS.

1. Ignore some rules

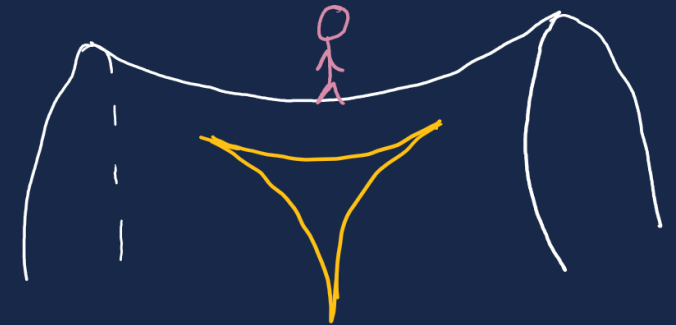
the interior angles of
a triangle add up to 180°



Euclidean / flat

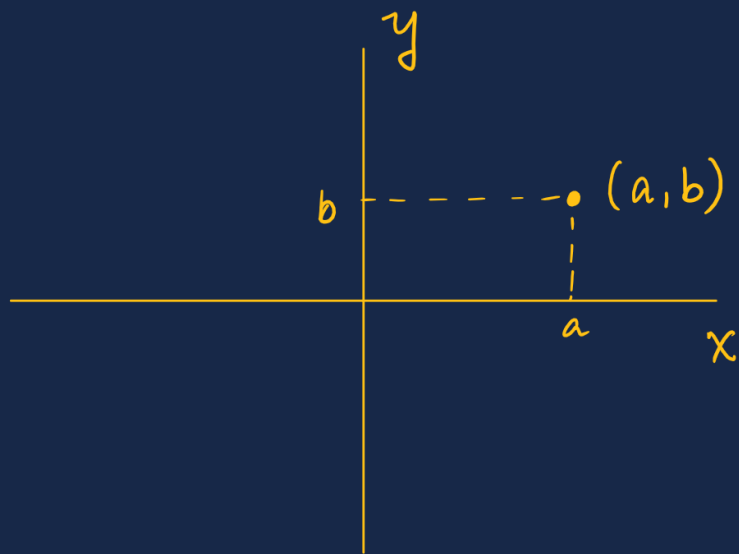


non-Euclidean



2. Ignore some measurements.

In 2d, 3d, we often use coordinates.



Important objects are given by equations:

1. $x^2 + y^2 = 1$.

2. $3x + y = 7$.

3. $y = e^x$.

4. $x^2 - y^2 = 1$.

1. above x-axis

2. conic sections

3. symmetric abt y axis

4. defined by

polynomials

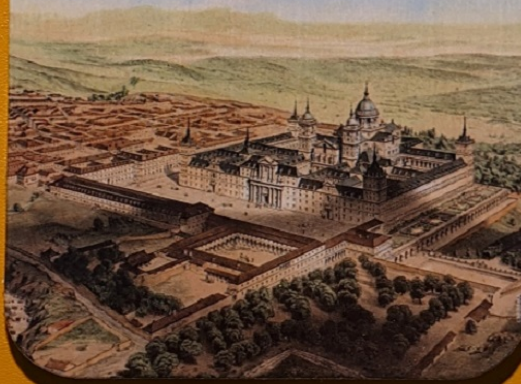
algebraic geometry

Some common measurements: lengths, angles, incidence, areas, etc.

MADRID

*Vista del Real
Monasterio de El Escorial*

4





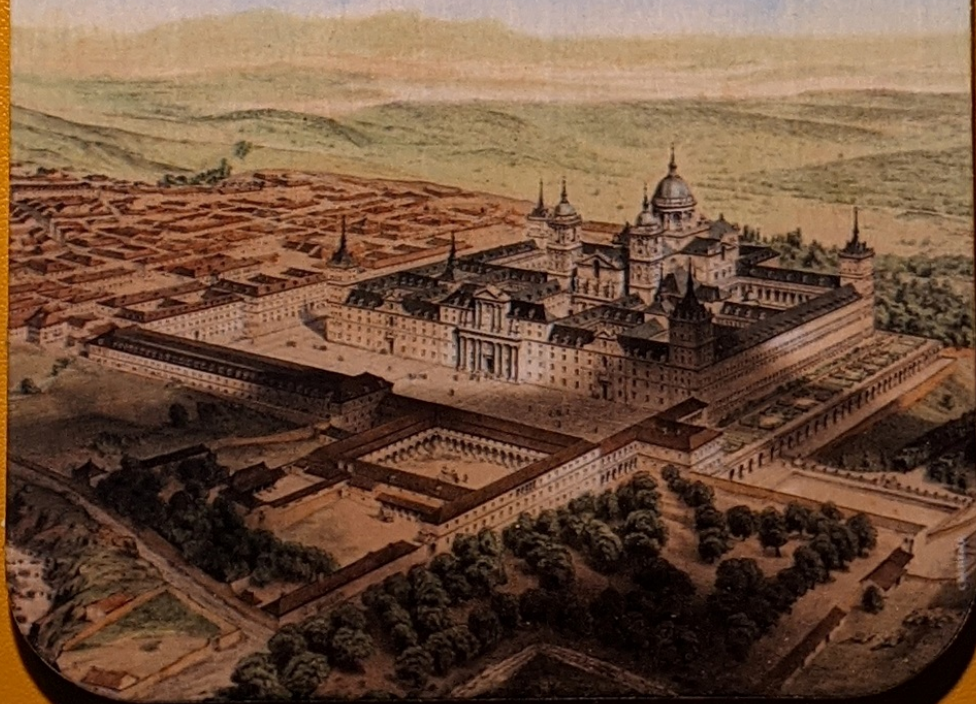




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*Vista del Real
Monasterio de El Escorial*



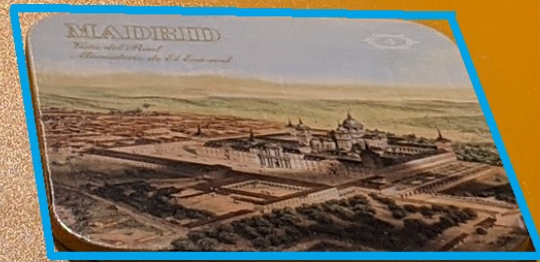
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*Vista del Real
Monasterio de El Escorial*





















MADRID

Vista del Real
Monasterio de El Escorial

Points of View (flips not allowed)

Example	What is it called?	What is allowed?	What is preserved?
	Rigid	Translations Rotations	Lines and incidence Lengths Angles Parallelism
	Similarity	Translations Rotations (Uniform) Scaling	Lines and incidence Lengths Ratios of lengths Angles Parallelism
	Affine	Translations Rotations Uniform scaling Non-uniform scaling Shears	Lines and incidence Ratios of lengths Angles Parallelism
	Projective	Translations Rotations Scaling Shears, Perspective etc.	Lines and incidence Lengths Angles Parallelism

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