THE BLUE SHEET

THE BIG 5 THEOREMS IN GEOMETRY

- Vertical angles are congruent
- The sum of the measures of the interior angles of a triangle is 180°.
- If two angles of a triangle are congruent, then the sides opposite them are congruent.
- Base angles of an isosceles triangle are congruent.
- Pythagorean Theorem: In a right triangle, the square of the hypotenuse is equal to the sum of the measures of the squares of the legs.

5 REASONS USED IN A GEOMETRIC PROOF:

- Given
- Definitions
- Postulates (PAT) - Postulate Assumed Truth
- Theorems (TIPS) - Theorem is Proved Statement
- Corollaries (CEPT) - Corollary easily proved theorem

Euclid:
"The Father of Geometry"

5 TYPES OF ANGLES (& THEIR MEASURE)

- Acute angle: between 0 and 90
- Right angle: equals 90
- Obtuse angle: between 90 and 180
- Straight angle: equals 180
- Reflex angle: between 180 and 360

5 FACTS IF TWO LINES ARE PARALLEL

- Then corresponding angles are congruent
- Then alternate interior angles are congruent.
- Then alternate exterior angles are congruent.
- Then same side interior angles are supplementary.
- If a transversal is perpendicular to one of the parallel lines then it is perpendicular to the other one also.

5 WAYS TO PROVE TWO LINES ARE PARALLEL

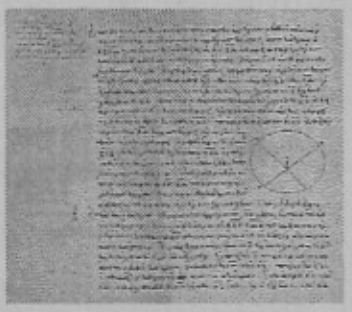
- *Show that* the Corresponding angles are congruent.
- *Show that* the alternate Interior angles are congruent.
- *Show that* the same-side interior angles are supplementary.
- *Show that* both lines are perpendicular to a third line.
- *Show that* both lines are parallel to a third line.

5 WAYS TO PROVE TWO TRIANGLES ARE CONGRUENT

- SSS
- SAS
- ASA
- AAS
- HL

C.P.C.T.C stands for

- Corresponding
- Parts (of)
- Congruent
- Triangles (are)
- Congruent



Euclid's Book: "The Elements"

5 TYPES OF QUADRILATERALS

- Square: 4 equal sides and 4 right angles
- Parallelogram: both pair of opposite sides are parallel
- Rectangle: 4 right angles
- Rhombus: 4 equal sides
- Trapezoid: exactly one pair of parallel sides

5 WAYS TO PROVE THAT A QUADRILATERAL IS A PARALLELOGRAM

- *Show that* both pairs of opposite sides are parallel.
- *Show that* both pairs of opposite angles are congruent.
- *Show that* both pairs of opposite sides are equal.
- *Show that* the diagonals bisect each other.
- *Show that* one pair of opposite sides are both congruent and parallel.

5 FACTS ABOUT THE DIAGONALS OF QUADRILATERALS

- Parallelogram: diagonals bisect each other
- Parallelogram: a diagonal will separate into two congruent triangles
- Rectangle: diagonals are equal
- Rhombus: diagonals are perpendicular
- Rhombus: each diagonal bisects two angles of the rhombus

5 TYPES OF GEOMETRIC TRANSFORMATIONS

- Translations
- Rotations
- Reflections
- Dilations
- Glide Reflections

C.S.S.P.P stands for

- Corresponding
- Sides (of)
- Similar
- Polygons (are in)
- Proportion

5 WAYS TO GET TWO TRIANGLES SIMILAR

- AA
- SAS Similarity Theorem
- SSS Similarity Theorem
- All angles equal and sides in proportion *(Definition)*
- If the altitude is drawn to the hypotenuse of a right triangle then the three triangles will be similar