

CLASS 7

MATHS

REVISION NOTES

Revision Notes for Class 7 Maths Chapter 14: Constructions and Tilings

Quick revision notes summarising all key concepts from Class 7 Maths Chapter 14 "Constructions and Tilings" (ruler-and-compass constructions and tiling).

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Perpendicular bisector: the set of all points equidistant from two given points. Constructed using equal-radius arcs from each endpoint (each individual arc-pair must share one radius, but the two pairs of arcs — above and below, or both on one side — need not use the same radius as each other).

3-4-5 rope method: since $3^2 + 4^2 = 5^2$, a triangle with sides in the ratio 3:4:5 always has a right angle opposite its longest side — an ancient (Sulba-Sutra) way to construct a 90° angle without instruments.

Angle bisector: constructed using an arc from the vertex cutting both arms, then equal-radius arcs from those two points meeting at a new point; joining the vertex to that point bisects the angle (proved via SSS congruence).

Repeated bisection of a 90° angle gives 45° , 22.5° , and so on; sums of constructible angles give more constructible angles — but not every angle (e.g. 65.5°) is reachable this way.

Copying an angle or figure: use a compass to transfer chord lengths (not a protractor) between the original and the copy, recreating identical angles via SSS congruence.

Constructing a parallel line: copy the angle a transversal makes with a given line onto a new point — equal corresponding angles guarantee the lines are parallel.

Regular hexagon in a circle: stepping off the circle’s own radius as a chord six times around the circumference always returns to the start exactly, since each step subtends a 60° central angle ($6 \times 60^\circ = 360^\circ$).

Constructing a perpendicular through an external point P: draw an arc centred at P cutting the line at two points; P is equidistant from those points, so it lies on their perpendicular bisector — constructing that bisector gives the required perpendicular through P.

Tangram: a 7-piece puzzle (2 large + 1 medium + 2 small right triangles, 1 square, 1 parallelogram) where all 7 pieces must be used edge-to-edge, without gaps or overlaps, to form new figures.

Checkerboard tiling-impossibility argument: every 2×1 domino tile covers exactly one black and one white square on a checkerboard-coloured region. If a region has an unequal number of black and white squares, it can never be completely tiled by such dominoes — a rigorous proof technique, not just a rule of thumb.

See also: [NCERT Solutions for Class 7 Maths Chapter 14](#)

Practice more: [Extra Questions for Class 7 Maths Chapter 14](#)

For the full chapter, see the [Class 7 Maths Formulas Handbook](#).