TYBA COACHING CENTRE, AJMER

RMS / RMC CLASS VI MATHEMATICS • CHAPTER 17: GEOMETRY: LINES & ANGLES (ज्यामिति: रेखाएं एवं कोण) — SUMMARY

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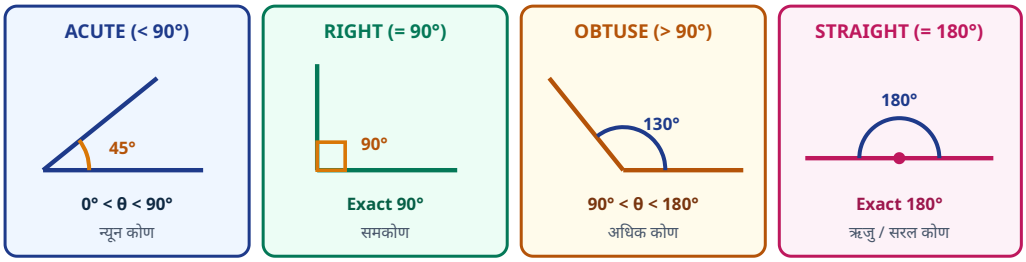


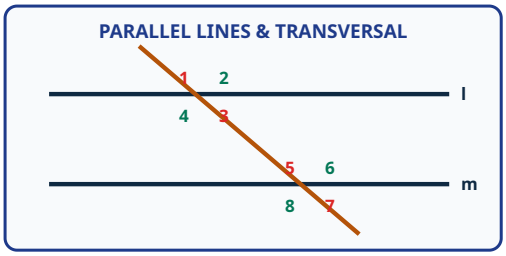
Figure 1: Four Major Types of Angles (कोणों के प्रमुख प्रकार)

1. POINT, LINE, RAY & LINE SEGMENT (बिंदु, रेखा, किरण एवं रेखाखंड) — Basic Geometry

Term (पद)	Endpoints (अंत बिंदु)	Length (लंबाई)	Symbol & Key Fact (प्रतीक एवं तथ्य)
Point (बिंदु)	0 (No dimensions)	Zero	Shows exact location (• A)
Line Segment (रेखाखंड)	**2 endpoints**	Fixed / Measurable	AB (shortest path between A and B)
Ray (किरण)	**1 endpoint**	Infinite in 1 direction	→ AB (e.g., sun rays, torchlight)
Line (रेखा)	**0 endpoints**	Infinite in both ways	↔ AB (extends endlessly both sides)

2. TYPES OF ANGLES & ANGLE PAIRS (कोणों के प्रकार एवं युग्म) — Angle Classification

Angle / Pair Type	Degree Measure / Sum	Hindi Name & Example
Acute / Right / Obtuse	0°–90° / 90° / 90°–180°	न्यून (45°), समकोण (90°), अधिक (120°)
Straight / Reflex / Complete	180° / 180°–360° / 360°	ऋजु (180°), प्रतिवर्ती (240°), संपूर्ण (360°)
Complementary Angles	Sum = **90°**	पूरक कोण (e.g., 35° & 55°)
Supplementary Angles	Sum = **180°**	संपूरक कोण (e.g., 110° & 70°)



GOLDEN ANGLE RULES (जब l ∥ m)

- **Corresponding (संगत):** ∠1=∠5, ∠2=∠6
- **Alt. Interior (एकांतर):** ∠3=∠5, ∠4=∠6
- **Co-Interior (सह-अंत:):** ∠3+∠6 = 180°
- **Vert. Opposite (शीर्षाभिमुख):** ∠1=∠3, ∠2=∠4
- **Linear Pair (रैखिक युग्म):** ∠1+∠2 = 180°

Figure 2: Parallel Lines Cut by a Transversal (समांतर रेखाएँ व तिर्यक छेदी रेखा)

Key Intersecting & Clock Facts (रेखाएँ व घड़ी के कोण):

- **Parallel Lines (समांतर रेखाएँ):** Never meet; distance between them is always constant (railway tracks).
- **Perpendicular Lines (लंबवत रेखाएँ):** Intersect at **90°**.
- **Clock Angle Rule:** 1 hour gap = 360° ÷ 12 = **30°**! At 3:00 or 9:00 = **90°**; at 6:00 = **180°**.

समांतर रेखाएँ कभी नहीं मिलतीं; लंबवत रेखाएँ 90° पर काटती हैं। घड़ी में 1 घंटे का कोण = 30° होता है।

Quick Solved RMS Example	Formula & Step-by-Step Solution
Find complement of 38° and supplement of 115°.	Complement = 90° − 38° = **52°**; Supplement = 180° − 115° = **65°**
Two angles of a linear pair are (2x)° and (3x)°. Find x.	2x + 3x = 180° ⇒ 5x = 180° ⇒ x = **36°** (Angles: 72°, 108°)
How many lines pass through (a) 1 point (b) 2 points?	(a) Through 1 point: **Infinite**; (b) Through 2 points: **Only 1**
What angle is equal to its own supplement?	x + x = 180° ⇒ 2x = 180° ⇒ x = **90°** (Complement self-equal: **45°**)

Narayan Sir's Mantra: Complementary = **90°** (C comes before S, 90 comes before 180!); **S**upplementary = **180°**! Vertically opposite angles are ALWAYS equal.

ट्रिक: Complementary (पूरक) = 90° और Supplementary (संपूरक) = 180°! शीर्षाभिमुख कोण हमेशा बराबर होते हैं।