TYBA COACHING CENTRE, AJMER

RMS / RMC CLASS VI MATHEMATICS • CHAPTER 10: PROFIT AND LOSS (लाभ एवं हानि)

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1. CORE TERMINOLOGY (मूलभूत शब्दावली) — Commercial Arithmetic Foundation

Cost Price (CP / क्रय मूल्य): The price at which an article is purchased. Overhead expenses (transport, repair, labour) are added to CP to get **Effective CP**.
वह मूल्य जिस पर कोई वस्तु खरीदी जाती है। ऊपरी खर्च (परिवहन, मरम्मत, मजदूरी) जोड़ने पर वास्तविक क्रय मूल्य प्राप्त होता है।

Selling Price (SP / विक्रय मूल्य): The price at which an article is sold to the customer.
वह मूल्य जिस पर कोई वस्तु ग्राहक को बेची जाती है।

Profit or Gain (लाभ): When SP > CP, there is a Profit. `Profit = SP - CP`
जब विक्रय मूल्य, क्रय मूल्य से अधिक हो (SP > CP), तो लाभ होता है। लाभ = विक्रय मूल्य - क्रय मूल्य।

Loss (हानि): When CP > SP, there is a Loss. `Loss = CP - SP`
जब क्रय मूल्य, विक्रय मूल्य से अधिक हो (CP > SP), तो हानि होती है। हानि = क्रय मूल्य - विक्रय मूल्य।

Marked Price (MP / अंकित मूल्य) & Discount (बट्टा/छूट): The tag price printed on an article is MP. Discount is always calculated on MP: `Discount = MP - SP`.
वस्तु पर छपा हुआ मूल्य अंकित मूल्य (MP) कहलाता है। छूट (बट्टा) हमेशा अंकित मूल्य पर दी जाती है।

2. MASTER FORMULA MATRIX (प्रमुख सूत्र तालिका) — Always Calculated on CP (Except Discount)

Concept (अवधारणा)	English Formula	Hindi Explanation (हिंदी सूत्र)
Profit % (लाभ %)	`Profit % = (Profit / CP) × 100`	लाभ % = (लाभ / क्रय मूल्य) × 100
Loss % (हानि %)	`Loss % = (Loss / CP) × 100`	हानि % = (हानि / क्रय मूल्य) × 100
Find SP (from CP & Profit%)	`SP = CP × (100 + P%) / 100`	विक्रय मूल्य = क्रय मूल्य × (100 + लाभ%) / 100
Find SP (from CP & Loss%)	`SP = CP × (100 - L%) / 100`	विक्रय मूल्य = क्रय मूल्य × (100 - हानि%) / 100
Find CP (from SP & Profit%)	`CP = (SP × 100) / (100 + P%)`	क्रय मूल्य = (विक्रय मूल्य × 100) / (100 + लाभ%)
Find CP (from SP & Loss%)	`CP = (SP × 100) / (100 - L%)`	क्रय मूल्य = (विक्रय मूल्य × 100) / (100 - हानि%)
Discount % (बट्टा %)	`Discount % = (Discount / MP) × 100`	छूट % = (छूट / अंकित मूल्य) × 100
SP from MP & Discount%	`SP = MP × (100 - D%) / 100`	विक्रय मूल्य = अंकित मूल्य × (100 - छूट%) / 100

GOLDEN RMS RULE: Profit % and Loss % are **ALWAYS calculated on Cost Price (CP)** unless the question explicitly specifies "on Selling Price". Discount % is **ALWAYS calculated on Marked Price (MP)**.
स्वर्णिम नियम: लाभ % और हानि % हमेशा क्रय मूल्य (CP) पर निकाले जाते हैं, जबकि छूट % हमेशा अंकित मूल्य (MP) पर निकाली जाती है।

3. HIGH-SPEED EXAM SHORTCUTS (त्वरित परीक्षा शॉर्टकट) — Save 30 Seconds Per Question

Special RMS Case	Direct Formula	Hindi Meaning
Two articles sold at same SP, one at x% gain, other at x% loss	Always **Loss % = (x^2 / 100)%**	समान विक्रय मूल्य पर x% लाभ व x% हानि होने पर सदैव (x^2/100)% की हानि होती है।
CP of x articles = SP of y articles	**Gain/Loss % = [(x - y) / y] × 100**	x वस्तुओं का CP = y वस्तुओं का SP हो, तो लाभ/हानि % = [(x - y)/y] × 100।
Successive Discounts d1% & d2%	**Net Discount = d1 + d2 - (d1×d2)/100**	दो क्रमिक छूट d1% व d2% की एकल समतुल्य छूट = d1 + d2 - (d1×d2)/100।
False Weight (Dishonest Dealer)	**Gain % = [Error / (True Wt - Error)] × 100**	त्रुटिपूर्ण बाट से लाभ % = [त्रुटि / (सही तौल - त्रुटि)] × 100।

4. SIX SOLVED MASTER MODELS (छः हल किए गए आदर्श प्रश्न) — Step-by-Step Bilingual

Model 1 (Basic Profit %): A cycle bought for ₹1,500 is sold for ₹1,800. Find Profit %.
Sol: Profit = 1800 - 1500 = ₹300. Profit % = (300 / 1500) × 100 = **20%**.
हल: लाभ = 1800 - 1500 = ₹300। लाभ % = (300 / 1500) × 100 = 20%।

Model 2 (Overhead Expenses): Ravi bought an old scooter for ₹8,000 and spent ₹2,000 on repairs. He sold it for ₹12,500. Find gain %.
Sol: Effective CP = 8,000 + 2,000 = ₹10,000. Profit = 12,500 - 10,000 = ₹2,500. Gain % = (2500 / 10000) × 100 = **25%**.
हल: कुल क्रय मूल्य = 8,000 + 2,000 = ₹10,000। लाभ = ₹2,500। लाभ % = (2500/10000) × 100 = 25%।

Model 3 (Finding CP from SP): By selling a watch for ₹960, a man loses 20%. Find CP.
Sol: CP = (SP × 100) / (100 - 20) = (960 × 100) / 80 = 12 × 100 = **₹1,200**.
हल: 80% = ₹960, अतः 100% (क्रय मूल्य) = (960 × 100) / 80 = ₹1,200।

Model 4 (x Articles CP = y Articles SP): If the CP of 15 pens equals the SP of 12 pens, find profit %.
Sol: Profit % = [(15 - 12) / 12] × 100 = (3 / 12) × 100 = **25%**.
हल: लाभ % = [(15 - 12) / 12] × 100 = (3/12) × 100 = 25%।

Model 5 (Same SP, x% Gain & x% Loss): Two TVs are sold for ₹9,900 each, one at 10% gain and one at 10% loss. Find net % gain or loss.
Sol: Always Loss % = (10^2 / 100)% = 100 / 100 = **1% Loss**.
हल: सदैव हानि % = (10^2 / 100)% = 1% हानि।

Model 6 (Marked Price & Discount): A shirt marked at ₹800 is sold at 15% discount. Find SP.
Sol: Discount = 15% of 800 = ₹120. SP = 800 - 120 = **₹680**.
हल: छूट = 800 का 15% = ₹120। विक्रय मूल्य = 800 - 120 = ₹680।