

Trigonometry

Quick Study Guide

HOW TO USE THIS GUIDE

HIGHLIGHTED TEXT SHOWS IMPORTANT POINTS

★ MARKS HIGH-FOCUS TOPICS

📝 INDICATES EXAM TIPS

⚠️ SHOWS COMMON ERRORS

💡 GIVES QUICK TIPS

BASIC RATIOS

Mnemonic: "SOME PEOPLE HAVE"

- SOME PEOPLE HAVE**
- $\sin \theta = P/H$
 - Opposite/Hypotenuse
 - Main ratios
 - Easy method
 - Perpendicular use
 - Hypotenuse basis
 - Adjacent side
 - Very important
 - Easy recall

Remember As:

DOST YAAR

- * $\sin \theta = \text{Opposite/Hypotenuse}$
- * Like: Standing height/Slant height
- * $\cos \theta = \text{Adjacent/Hypotenuse}$
- * Like: Base/Slant
- * $\tan \theta = \text{Opposite/Adjacent}$
- * Like: Height/Base

Common Errors

- * Wrong side identification
- * Ratio confusion
- * Inverse mixing
- * Sign mistakes

SPECIAL ANGLES

Mnemonic: "TABLO RAJA"

- TABLO RAJA**
- Thirty degree (30°)
 - Angles important
 - Basic values
 - Learn well
 - Order maintain
 - Remember sequence
 - All values
 - Jaldi yaad karo
 - Apply everywhere

(Table of $0^\circ, 30^\circ, 45^\circ, 60^\circ, 90^\circ$)

QUICK TABLES:

CHOTA MOTA

- * sin values:
- * $0^\circ = 0$
- * $30^\circ = 1/2$
- * $45^\circ = 1/\sqrt{2}$
- * $60^\circ = \sqrt{3}/2$
- * $90^\circ = 1$

REMEMBER AS:

CHOTA GANG

- * $30^\circ = \text{"HALF GANG"}$
- * $\sin = 1/2$
- * $\cos = \sqrt{3}/2$
- * $\tan = 1/\sqrt{3}$
- * $45^\circ = \text{"EQUAL EQUAL"}$
- * $\sin = \cos = 1/\sqrt{2}$
- * $\tan = 1$

COMPLEMENTARY ANGLES

Mnemonic: "NINETY TEAM"

- NINETY TEAM**
- Ninety degree sum
 - Important pair
 - Need both angles
 - Easy relation
 - Two angles
 - Yaad karo

- TEAM**
- Thirty and Sixty
 - Easy pairs
 - Angle sum 90°
 - Main concept

QUICK RULES:

ULTA SEEDHA

- * $\sin \theta = \cos(90^\circ - \theta)$
- * $\cos \theta = \sin(90^\circ - \theta)$
- * $\tan \theta = 1/\tan(90^\circ - \theta)$

EXAMPLE

- * $\sin 30^\circ = \cos 60^\circ$
- * $\cos 30^\circ = \sin 60^\circ$

TRIGONOMETRIC IDENTITIES

Mnemonic: "SQUARE BOSS"

- SQUARE BOSS**
- Square relations
 - Quotient form
 - Use properly
 - Add/subtract
 - Remember well
 - Easy check

BASIC IDENTITY

ONE RULE

- * $\sin^2 \theta + \cos^2 \theta = 1$

OTHER IDENTITIES:

RATIO GAMES:

- * $\tan \theta = \sin \theta / \cos \theta$
- * $\sec \theta = 1 / \cos \theta$
- * $\csc \theta = 1 / \sin \theta$
- * $\cot \theta = 1 / \tan \theta$
- *

HEIGHTS AND DISTANCES

Mnemonic: "TOWER TALES"

- TOWER TALES**
- Tower height
 - Observe angle
 - With distance
 - Easy steps
 - Right triangle

- TALES**
- Take angle
 - Apply ratio
 - Length find
 - Easy solve
 - Step by step

PROBLEM STEPS:

SOLVE KARO:

1. Draw diagram
2. Mark angles
3. Choose ratio
4. Apply formula
5. Solve carefully

ANGLE OF ELEVATION

Mnemonic: "UPAR DEKHO"

- UPAR DEKHO**
- Distance base
 - Elevation angle
 - Know height
 - Height find
 - Observe angle

- UPAR**
- Up angle
 - Point of sight
 - Angle measure
 - Right triangle

REMEMBER AS:

BUILDING VIEW:

- * Like looking at building:
- * You = Ground point
- * Building = Target
- * Angle = Looking up
- * Base = Distance from building



ANGLE OF DEPRESSION

Mnemonic: "NICHE DEKHO"

N
I
C
H
E
D
E
K
H
O

- Niche angle
- Important view
- Calculate height
- Height from top
- Easy solve
- Down looking
- Equal to elevation
- Know base
- Height given
- Observe carefully

KEY POINTS:

TOP VIEW:

- * From height looking down
- * Angle with horizontal
- * Equal to elevation
- * Base distance needed

QUICK REVISION CHECKLIST

Before Exam:

- ✓ Basic ratios
- ✓ Special angles
- ✓ Complementary angles
- ✓ Identities
- ✓ Heights & distances
- ✓ Angles of elevation/depression
- ✓ Applications

Scoring Tips:

1. Draw neat diagrams
2. Mark all angles
3. Label sides clearly
4. Show substitutions
5. Check units

100%

HIGH FOCUS AREAS

1. Basic Ratios (5 marks)
2. Special Angles (5 marks)
3. Identities (5 marks)
4. Heights & Distances (5 marks)
5. Applications (4 marks)

PROBLEM SOLVING TIPS

Mnemonic: "SOLVE KARO"

S
O
L
V
E

- See problem type
- Organize data
- List given values
- Verify diagram
- Equation form

SPECIAL VALUES TABLE

	0°	30°	45°	60°	90°
SIN	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
COS	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0
TAN	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	Not Defined

K
A
R
O

- Keep checking units
- Angle measures
- Right ratio use
- Order maintain

GOOD
LUCK!

