19AEB203: Mechanics of Solids:-

UNIT-2 - Shear force Diagram, Bending moment diagram for Beams:-

Beam : A structural member that is designed to resist forces acting in the transverse direction is called a beam.

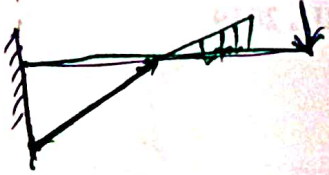
∴ Determinate Beams: Cantilever beam

Simply supported beam

Overhanging beam.

Indeterminate Beams:

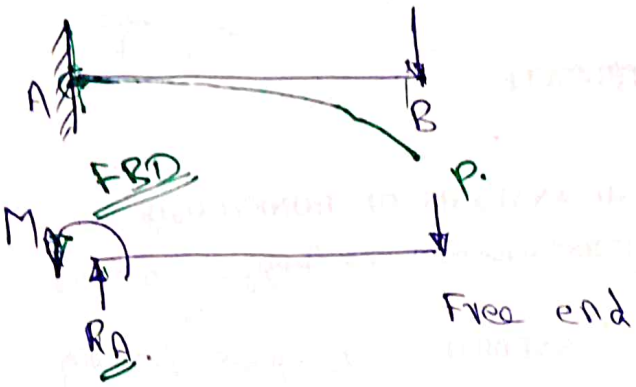
Propped cantilever beam



Fixed - Fixed Beam

Continuous Beam.

Cantilever Beam



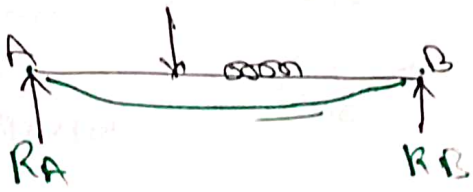
Fixed end (or)

- Built-in end

Slope = 0

deflection = 0.

Simply Supported Beam



R_A, R_B = Support reaction forces at A & B respectively.

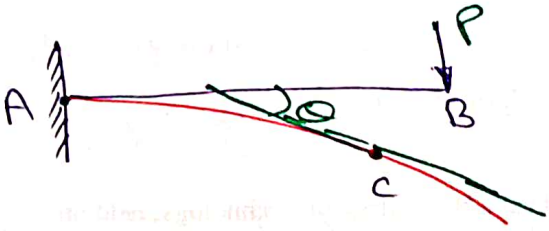
In a SSB support reaction moment are zero

Simply supported end

deflection = 0

Slope is not equal to zero

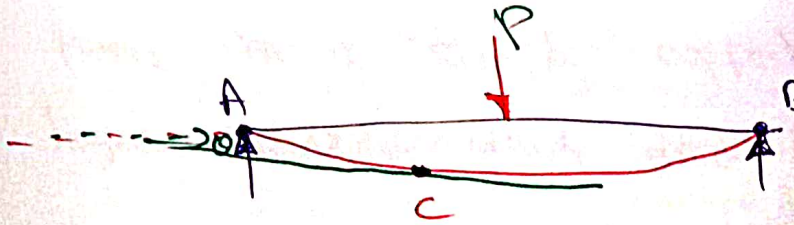
What is slope at a point?



Slope is an angle

slope is denoted by θ

θ_C = slope at C.



Consider a Cantilever beam and a simply supported beam. Slope at the point C in both beams are to be found. To do so, draw a tangent at the point C to deflection curve. Extend the tangent to meet the undeflected beam position.