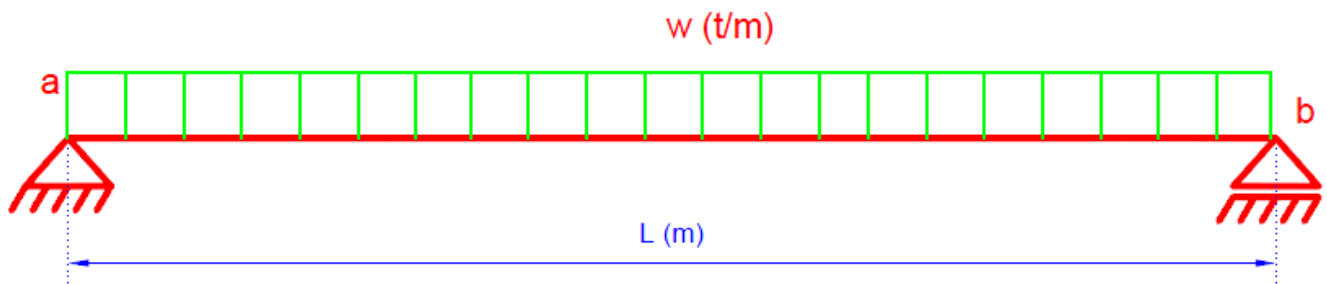# Problem 2

For a simple beam with span L (m) loaded by W (t/m)
Prove that the section at mid span don't carry any
shear forces and find the moment at mid span and draw
S.F.D and B.M.D

SOL.

REACTION.

Xa= 0

Ya = Yb = wL/2

Shear force at mid span = wL/2 – wL/2 = 0

Bending moment at mid span = $\frac{wL}{2} x \frac{L}{2} - \frac{wL}{2} x \frac{L}{4} = \frac{wL^2}{8}$

w (t/m)

a

b

L (m)

wL / 2

wL / 2

wL / 2

wL / 2

wL / 2

wL / 2

$wL^2/8$