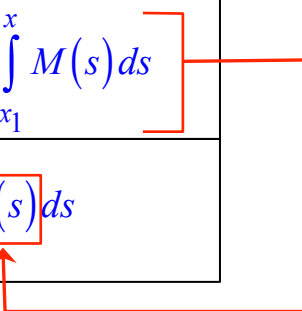


Summary: Beam deflection by integration (determinate)

FUNDAMENTAL EQUATIONS

<i>differential form</i>	<i>integral form</i>
$M(x) = \frac{EI}{\rho} \approx EI \frac{d\theta}{dx}$	$\theta(x) = \theta(x_1) + \frac{1}{EI} \int_{x_1}^x M(s) ds$
$\tan\theta \approx \theta = \frac{dv}{dx}$	$v(x) = v(x_1) + \int_{x_1}^x \theta(s) ds$



METHOD

- Draw FBD of entire structure and solve for reactions.
- Divide beam into sections based on changes in supports or loadings.
- For each section:
 - Make cut through section, and determine $M(x)$.
 - Integrate $M(x)/EI$ to find $\theta(x)$.
 - Integrate $\theta(x)$ to find $v(x)$.
 - Enforce boundary conditions on θ and v .
 - Match θ and v across boundaries of sections.