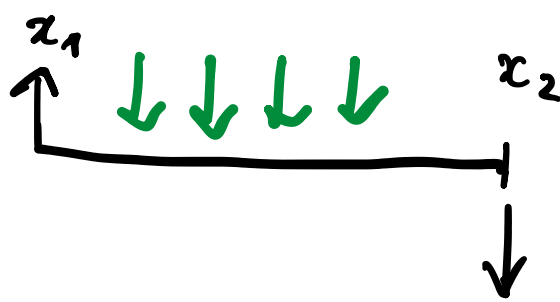


$N : (0, L) \rightarrow \mathbb{R}$
 $V : (0, L) \rightarrow \mathbb{R}$
 $M : (0, L) \rightarrow \mathbb{R}$



$\frac{dN}{dx} = 0$
 $\frac{dV}{dx} + p = 0$ ← ?

$V(x_2) - V(x_1) + \int_{x_1}^{x_2} p(x) dx = 0$

```
syms V(x) x1 x2 p(x) x
V(x2) - V(x1) + int(p(x), x, [x1, x2])
```

ans =
 $V(x_2) - V(x_1) + \int_{x_1}^{x_2} p(x) dx$

```
syms V(x) x1 x2 p(x) x
expression = V(x2) - V(x1) + int(p(x), x, [x1, x2])
```

expression =
 $V(x_2) - V(x_1) + \int_{x_1}^{x_2} p(x) dx$

```
syms V(x) x1 x2 p(x) x
expression = V(x2) - V(x1) + int(p(x), x, [x1, x2])
diff(expression, x)
```

expression =
 $V(x_2) - V(x_1) + \int_{x_1}^{x_2} p(x) dx$
ans = 0

```
syms V(x) x1 x2 p(x) x
expression = V(x2) - V(x1) + int(p(x), x, [x1, x2])
diff(expression, x2)
```

expression =
 $V(x_2) - V(x_1) + \int_{x_1}^{x_2} p(x) dx$
ans =
 $\frac{\partial}{\partial x_2} V(x_2) + p(x_2)$

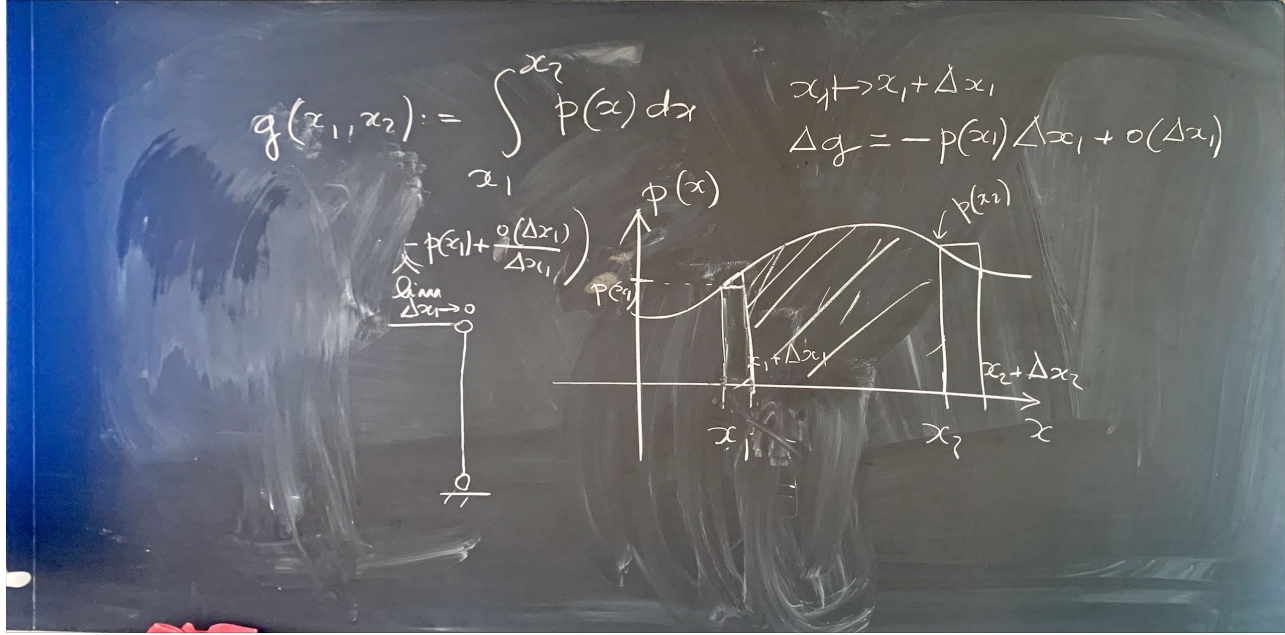
```
g(x1, x2) = int(p(x), x, [x1, x2])
diff(g(x1, x2), x1)
```

g(x1, x2) =
 $\int_{x_1}^{x_2} p(x) dx$
ans =
 $-p(x_1)$

```
diff(expression, x2)
```

```
diff(int(p(x), x, [x1, x2]), x1)
```

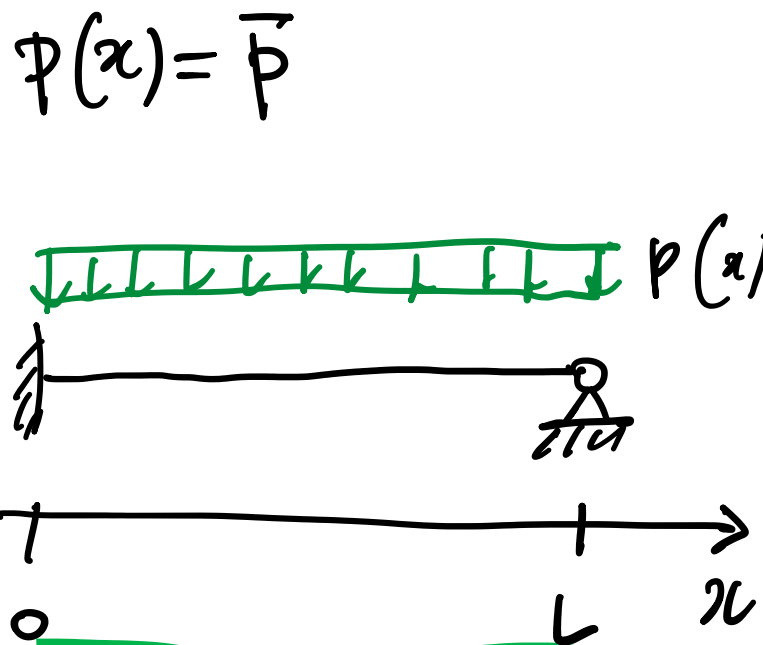
g(x1, x2) =
 $\int_{x_1}^{x_2} p(x) dx$
ans =
 $-p(x_1)$
ans =
 $p(x_2)$



$N : (0, L) \rightarrow \mathbb{R}$
 $V : (0, L) \rightarrow \mathbb{R}$
 $M : (0, L) \rightarrow \mathbb{R}$

$\frac{dN}{dx} = 0$
 $\frac{dV}{dx} + p = 0$
 $\frac{dM}{dx} - V = 0$
 $M(L) = 0$

$C_2 L - \frac{\bar{p}}{2} L^2 + C_3 = 0$



$N = EA \varepsilon$
 $M = EI \kappa$
 $\vartheta = \frac{dw}{dx}$

$\varepsilon : [0, L] \rightarrow \mathbb{R}$
 $\kappa : [0, L] \rightarrow \mathbb{R}$
 $v : [0, L] \rightarrow \mathbb{R}$
 $w : [0, L] \rightarrow \mathbb{R}$

$M(L) \tilde{\vartheta}(L) = 0$
 $\forall \tilde{\vartheta}(L) \in \mathbb{R}$

$\varepsilon = \frac{dw}{dx}$
 $\kappa = \frac{d\vartheta}{dx}$

$w(0) = 0$
 $v(0) = 0$
 $\vartheta(0) = 0$
 $w(L) = 0$
 $v(L) = 0$

