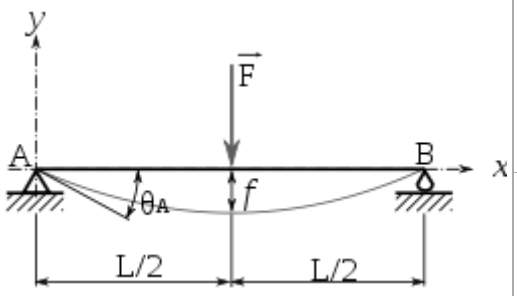
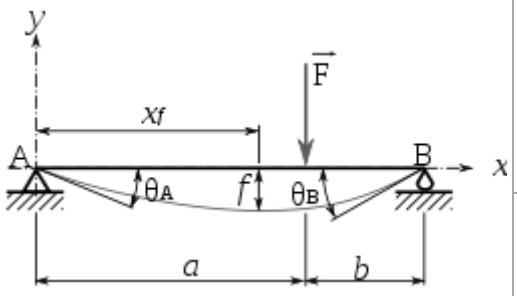
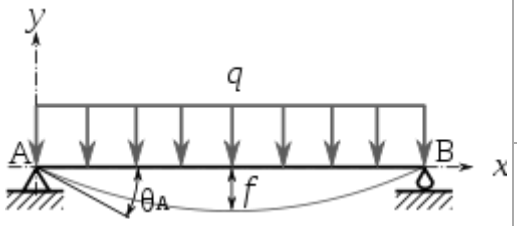
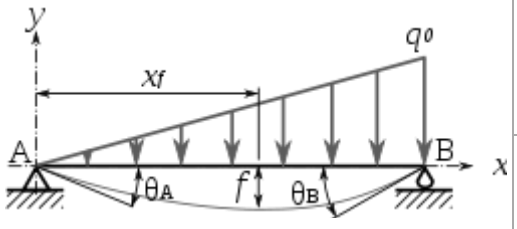
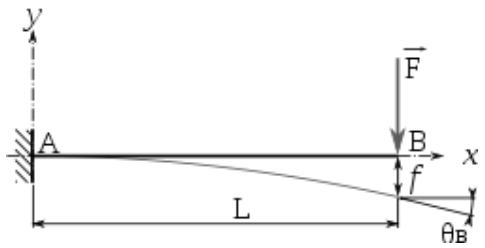
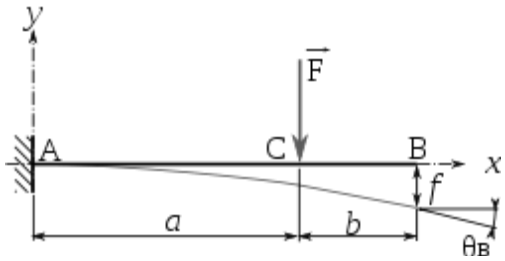
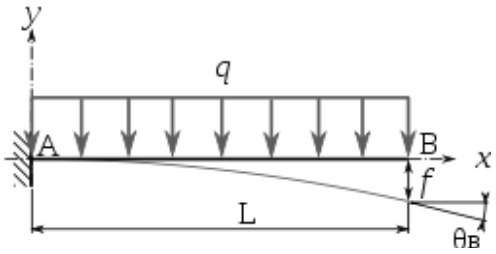
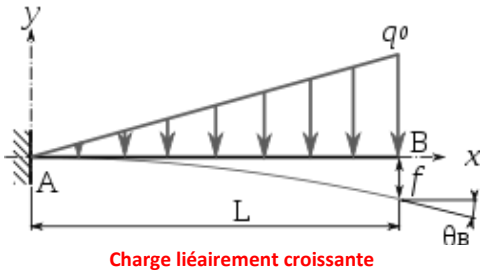
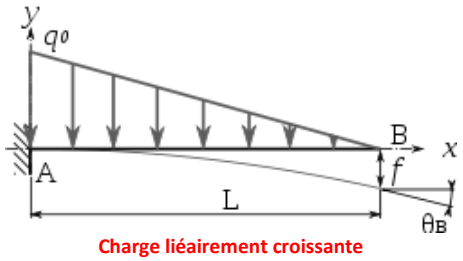
1 – POUTRE ISOSTATIQUE SUR APPUIS SIMPLES

Sollicitation	Flèche	Pente
 Force concentrée en son centre	$f = \frac{\mathrm{F L}^3}{48\mathrm{EI}} \quad x_\mathrm{f} = \frac{\mathrm{L}}{2}$	$-\theta_\mathrm{A} = \theta_\mathrm{B} = \frac{\mathrm{F L}^2}{16\mathrm{EI}}$
	$y = \frac{-\mathrm{F}x}{48\mathrm{EI}}(3\mathrm{L}^2 - 4x^2)$	
 Force concentrée	$f = -\frac{\mathrm{F}b(\mathrm{L}^2 - b^2)^{3/2}}{9\sqrt{3}\mathrm{EIL}}$ $x_\mathrm{f} = \sqrt{\frac{\mathrm{L}^2 - b^2}{3}}$	$\theta_\mathrm{A} = \frac{\mathrm{F}ab(\mathrm{L}+b)}{\mathrm{EIL}}$ $\theta_\mathrm{B} = \frac{\mathrm{F}ab(\mathrm{L}+a)}{\mathrm{EIL}}$
	$x \leqslant a : y = \frac{\mathrm{F}bx}{6\mathrm{EIL}}(x^2 + b^2 - \mathrm{L}^2)$ $x \geqslant a : y = \frac{\mathrm{F}a}{6\mathrm{EIL}}(x^3 - 3\mathrm{L}^2x^2 + (a^2 + 2\mathrm{L}^2)x - a^2\mathrm{L})$	
 Charge linéique uniforme q(x) = q0	$f = -\frac{5q\mathrm{L}^4}{384\mathrm{EI}} \quad x_\mathrm{f} = \frac{\mathrm{L}}{2}$	$\theta_\mathrm{A} = \theta_\mathrm{B} = \frac{q\mathrm{L}^3}{24\mathrm{EI}}$
	$x \leqslant \frac{\mathrm{L}}{2} : y = \frac{qx}{24\mathrm{EI}}(x^3 - 2\mathrm{L}x^2 + \mathrm{L}^3)$	
 Charge liéairement croissante q(x) = q0 . (x / L)	$f \simeq -\frac{0,006\,52 q_0 \mathrm{L}^4}{384\mathrm{EI}}$ $x_\mathrm{f} \simeq 0,519\,3\mathrm{L}$	$\theta_\mathrm{A} = \frac{7q_0\mathrm{L}^3}{360\mathrm{EI}}$ $\theta_\mathrm{B} = \frac{q_0\mathrm{L}^3}{45\mathrm{EI}}$
	$y = \frac{q_0 x}{360\mathrm{EI}}(-3x^4 + 10\mathrm{L}^2x^2 - 7\mathrm{L}^4)$	
	$y = \frac{\mathrm{C}x}{6\mathrm{EIL}}(x^2 - 3Lx + 2\mathrm{L}^2)$	

Source : http://fr.wikibooks.org/

2 – POUTRE ISOSTATIQUE ENCASTRÉES

Sollicitation	Flèche	Pente
 Force concentrée à l'extrémité	$f = -\frac{FL^3}{3EI}$	$\theta_B = \frac{FL^2}{2EI}$
	$y = \frac{F}{6EI}(x^3 - 3Lx^2)$	
 Charge concentrée	$f = \frac{Fa^2}{6EI}(a - 3L)$	$\theta_B = \theta_C = \frac{Fa^2}{2EI}$
	$x \leqslant a : y = \frac{F}{6EI}(x^3 - 3ax^2)$ $x \geqslant a : y = \frac{F}{6EI}(-3a^2x + a^3)$	
 Charge linéique uniforme q(x) = q_0	$f = -\frac{qL^4}{8EI}$	$\theta_B = \frac{qL^3}{6EI}$
	$y = \frac{-qx^2}{24EI}(x^2 - 4Lx + 6L^2)$	
 Charge liéairement croissante q(x) = q0 . (x / L)	$f = -\frac{11q_0L^4}{120EI}$	$\theta_B = \frac{q_0L^3}{8EI}$
	$y = \frac{-q_0x^2}{120EIL}(x^3 - 10L^2x + 20L^3)$	
 Charge liéairement croissante q(x) = q0 . (/ - x / L)	$f = -\frac{q_0L^4}{30EI}$	$\theta_B = \frac{q_0L^3}{24EI}$
	$y = \frac{q_0x^2}{120EIL}(x^3 - 5Lx^2 + 10L^2x - 10L^3)$	

Source : http://fr.wikibooks.org/