| Load case Moment | Reactions | Deflection |
| :---: | :---: | :---: |
| $\begin{aligned} & M_{x_{1}}=-F \cdot\left(a-x_{1}\right) \\ & M_{A}=F \cdot a \end{aligned}$ | $A=-F$ | $\delta_{p}=\frac{F \cdot a^{3}}{3 \cdot E \cdot 1}$ |
|  | $A=-q \cdot a$ | $\delta_{m}=\frac{q \cdot a^{4}}{8 \cdot E \cdot l}$ |
|  | $A=-\frac{q \cdot 1}{2}$ | $\delta_{\mathrm{m}}=\frac{\mathrm{q} \cdot \mathrm{l}^{4}}{30 \cdot \mathrm{E} \cdot \mathrm{I}}$ |
|  | $\begin{aligned} & A=-\frac{F \cdot b}{l} \\ & B=-\frac{F \cdot a}{l} \end{aligned}$ | $\delta_{F}=\frac{F \cdot a^{2} \cdot b^{2}}{3 \cdot E \cdot l \cdot l}$ |
| $\begin{array}{ll} A \frac{q}{Q} B & M_{x}=\frac{q \cdot l^{2}}{2} \cdot\left(\frac{x}{l}-\frac{x^{2}}{l^{2}}\right) \\ -1 & M_{1 / 2}=\frac{q \cdot l^{2}}{8} \end{array}$ | $A=B=-\frac{q \cdot l}{2}$ | $\delta_{1 / 2}=\frac{5 \cdot q \cdot 1^{4}}{384 \cdot E \cdot 1}$ |
| $\begin{aligned} & M_{x_{1}}=A \cdot x_{1} \\ & M_{x_{2}}=A \cdot x_{2}-q \cdot \frac{\left(x_{2}-a\right)^{2}}{2} \\ & M_{x_{3}}=B \cdot\left(l-x_{3}\right) \\ & M_{\max }=A \cdot a+\frac{a^{2}}{2 \cdot q} \end{aligned}$ | $\begin{aligned} & A=-\frac{q \cdot b}{2 \cdot 1} \cdot(2 \cdot c+b) \\ & B=-\frac{q \cdot b}{2 \cdot 1} \cdot(2 \cdot a+b) \end{aligned}$ |  |
| $\begin{array}{ll} A-\frac{q}{} B & M_{x}=\frac{q \cdot l^{2}}{6} \cdot\left(\frac{x}{l}-\frac{x^{3}}{l^{3}}\right) \\ M_{\max }=0,064 \cdot q \cdot l^{2} \\ & x=0,577 \cdot l \end{array}$ | $\begin{aligned} & A=-\frac{q \cdot l}{6} \\ & B=-\frac{q \cdot l}{3} \end{aligned}$ | $\begin{aligned} & \delta_{\max }=0,00652 \cdot \frac{q \cdot 1^{4}}{E \cdot 1} \\ & x=0,519 \cdot 1 \end{aligned}$ |
|  | $\begin{aligned} & A=-\frac{M_{a}}{l} \\ & B=+\frac{M_{a}}{l} \end{aligned}$ | $\delta_{\max }=0,064 \cdot \frac{M_{a} \cdot l^{2}}{E \cdot I}$ |
| $\underset{1}{A-x-1} \overbrace{l}^{M_{a}} \quad M_{x}=M_{a} \cdot\left(1-\frac{x}{l}\right)+M_{b} \cdot \frac{x}{l}$ | $\begin{aligned} & A=\frac{M_{b}-M_{a}}{l} \\ & B=\frac{M_{a}-M_{b}}{l} \end{aligned}$ |  |
|  | $A=B=-\frac{q \cdot l}{4}$ | $\delta_{l / 2}=\frac{q \cdot l^{4}}{120 \cdot E \cdot 1}$ |


| Load case | Moment | Reactions | Deflection |
| :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & M_{F}=\frac{F \cdot a^{2} \cdot b}{2 \cdot l^{2}} \cdot\left(2+\frac{b}{l}\right) \\ & M_{A}=-\frac{F \cdot l}{2} \cdot\left(\frac{b}{l}-\frac{b^{3}}{l^{3}}\right) \end{aligned}$ | $\begin{aligned} & A=-\frac{F \cdot b}{2 \cdot l} \cdot\left(3-\frac{b^{2}}{l^{2}}\right) \\ & B=-\frac{F \cdot a^{2}}{2 \cdot l^{2}} \cdot\left(3-\frac{a}{l}\right) \end{aligned}$ | $\begin{aligned} & \delta_{F}=\frac{F \cdot a^{3}}{12 \cdot E \cdot 1} \cdot \\ & \cdot\left(3-5 \cdot \frac{a}{l}+\frac{a^{2}}{l^{2}}+\frac{a^{3}}{1^{3}}\right) \end{aligned}$ |
|  | $\begin{aligned} & M_{x}=\frac{q \cdot(l-x)}{8} \cdot(4 \cdot x-1) \\ & M_{A}=-\frac{q \cdot l^{2}}{8} \\ & M_{\max }=0,0703 \cdot q \cdot l^{2} \\ & x=0,625 \cdot 1 \end{aligned}$ | $\begin{aligned} & A=-\frac{5}{8} \cdot q \cdot 1 \\ & B=-\frac{3}{8} \cdot q \cdot 1 \end{aligned}$ | $\begin{aligned} & \delta_{\max }=\frac{\mathrm{q} \cdot \mathrm{l}^{4}}{185 \cdot \mathrm{E} \cdot 1} \\ & x=0,4215 \cdot 1 \end{aligned}$ |
|  | $M_{A}=-\frac{q \cdot a^{2}}{8} \cdot\left(2-\frac{a}{l}\right)^{2}$ | $\begin{aligned} & A=-q \cdot a-B \\ & B=-\frac{q \cdot a^{2}}{2 \cdot 1}+\frac{M_{A}}{1} \end{aligned}$ |  |
|  | $\begin{aligned} & M_{x}=\frac{q \cdot(1-x)}{30 \cdot 1} \cdot\left[3 \cdot 1^{2}-5 \cdot(1-x)^{2}\right] \\ & M_{A}=-\frac{1}{15} \cdot q \cdot l^{2} \\ & M_{\max }=0,0298 \cdot q \cdot l^{2} \\ & x=0,553 \cdot 1 \end{aligned}$ | $\begin{aligned} & A=-\frac{2}{5} \cdot q \cdot 1 \\ & B=-\frac{1}{10} \cdot q \cdot 1 \end{aligned}$ | $\delta_{x}=\frac{q \cdot 1 \cdot(1-x)}{120 \cdot E \cdot 1} \cdot\left(2 \cdot 1 \cdot x-x^{2}\right)$ |
|  | $\begin{aligned} & M_{x}=\frac{q}{120 \cdot 1} \cdot\left(27 \cdot x \cdot 1^{2}-20 \cdot x^{3}-7 \cdot 1^{3}\right) \\ & M_{A}=-\frac{7}{120} \cdot q \cdot 1^{2} \\ & M_{\max }=0,0419 \cdot q \cdot 1^{2} \\ & x=0,671 \cdot 1 \end{aligned}$ | $\begin{aligned} & A=-\frac{9}{40} \cdot q \cdot 1 \\ & B=-\frac{11}{40} \cdot q \cdot 1 \end{aligned}$ | $\begin{aligned} & \delta_{x}=\frac{q \cdot x^{2}}{240 \cdot E \cdot 1} \cdot \\ & \cdot\left(7 \cdot 1^{2}-9 \cdot x \cdot 1+\frac{2 \cdot x^{3}}{1}\right) \end{aligned}$ |
|  | $\begin{aligned} & M_{F}=\frac{2 \cdot F \cdot a^{2} \cdot b^{2}}{B^{3}} \\ & M_{A}=-\frac{F \cdot a \cdot b^{2}}{l^{2}} \\ & M_{B}=-\frac{F \cdot a^{2} \cdot b}{l^{2}} \end{aligned}$ | $\begin{aligned} & A=-F \cdot \frac{b^{2}}{l^{2}} \cdot\left(1+2 \cdot \frac{a}{l}\right. \\ & B=-F \cdot \frac{a^{2}}{l^{2}} \cdot\left(1+2 \cdot \frac{b}{l}\right) \end{aligned}$ | $\delta_{F}=\frac{q \cdot a^{3} \cdot b^{3}}{3 \cdot E \cdot l \cdot l^{3}}$ |
|  | $\begin{aligned} & M_{1 / 2}=\frac{q \cdot l^{2}}{24} \\ & M_{A}=M_{B}=-\frac{q \cdot 1^{2}}{12} \end{aligned}$ | $A=B=-\frac{q \cdot 1}{2}$ | $\delta_{1 / 2}=\frac{q \cdot 1^{4}}{384 \cdot E \cdot 1}$ |
|  | $\begin{aligned} & M_{1 / 2}=\frac{q \cdot l \cdot a}{24} \cdot\left(3-3 \cdot \frac{a}{l}+\frac{a^{2}}{l^{2}}\right) \\ & M_{A}=M_{B}=\frac{q \cdot 1 \cdot a}{24} \cdot\left(3-\frac{a^{2}}{l^{2}}\right) \end{aligned}$ | $A=B=-\frac{q \cdot a}{2}$ |  |
|  | $\begin{array}{ll} M_{x}=\frac{q \cdot l^{2}}{60} \cdot\left(-2+9 \cdot \frac{x}{l}-10 \cdot \frac{x^{3}}{l^{3}}\right) \\ M_{A}=-\frac{q \cdot l^{2}}{30} & M_{B}=-\frac{q \cdot l^{2}}{20} \\ M_{\max }=\frac{q \cdot l^{2}}{46,6} & x=0,548 \cdot 1 \end{array}$ | $\begin{aligned} & A=-\frac{3}{20} \cdot q \cdot 1 \\ & B=-\frac{7}{20} \cdot q \cdot 1 \end{aligned}$ | $\delta_{x}=\frac{q \cdot \cdot^{2} \cdot x^{2}}{120 \cdot E \cdot 1} \cdot\left(2-3 \cdot \frac{x}{1}+\frac{x^{3}}{1^{3}}\right)$ |

