Reproduce flexibility matrix, slide 412

In[23]:=
```
EI = 86 * 10^6;
L0 = 120;
y[x_, a_, b_, L0_, pLocation_] := If[pLocation ≤ L0,
   Which[
    x ≤ a, 1/(12 EI) (3 b (1 - b^2/L0^2) x^2 - b/L0 (3 - b^2/L0^2) x^3),
    x ≥ L0, (-b a^2)/(4 EI L0) (x - L0)
   ],
   Which[
    x ≤ L0, a/(4 EI L0) (x^3 - L0 x^2),
    x ≥ L0, a/(4 EI L0) (x^3 - L0 x^2 - (2 L0/(3 a) + 1) (x - L0)^3)

   ]
  ];


L0 = 120; a = L0/2; b = L0/2; x = L0/2; pLocation = L0/2;
a11 = y[x, a, b, L0, pLocation];

L0 = 120; a = L0/2; b = L0/2; x = L0 + L0/2; pLocation = L0/2;
a21 = y[x, a, b, L0, pLocation];

L0 = 120; a = L0/2; x = L0/2; pLocation = L0/2 + L0;
a12 = y[x, a, b, L0, pLocation];

L0 = 120; a = L0/2; x = L0 + L0/2; pLocation = L0/2 + L0;
a22 = y[x, a, b, L0, pLocation];

a = {{a11, a12}, {a21, a22}};
MatrixForm[N[a]]
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Out[67]//MatrixForm=

$$\begin{pmatrix} 0.00018314 & -0.000313953 \\ -0.000313953 & 0.00209302 \end{pmatrix}$$