```
In[1]:= Restart;
        Remove["Global`*"]
```

## ■ Biegelinie, Seite 100 a)

```
In[3]:= w[x_] = qo l^4 / (24 EI) ((x/l)^4 - 4 (x/l)^3 + 6 (x/l)^2)
        w2[x_] = D[w[x], x, x]
```

$$\text{Out[3]}= \frac{l^4\ qo \left(\frac{6\,x^2}{l^2} - \frac{4\,x^3}{l^3} + \frac{x^4}{l^4}\right)}{24\ EI}$$

$$\text{Out[4]}= \frac{l^4\ qo \left(\frac{12}{l^2} - \frac{24\,x}{l^3} + \frac{12\,x^2}{l^4}\right)}{24\ EI}$$

## ■ Moment, Seite 99

```
In[5]:= M = -EI * w2[x]
```

$$\text{Out[5]}= -\frac{1}{24}\ l^4\ qo \left(\frac{12}{l^2} - \frac{24\,x}{l^3} + \frac{12\,x^2}{l^4}\right)$$

## ■ mech. Spannung, Seite 70

```
In[6]:= σ = M / Iz z
```

$$\text{Out[6]}= -\frac{l^4\ qo \left(\frac{12}{l^2} - \frac{24\,x}{l^3} + \frac{12\,x^2}{l^4}\right) z}{24\ Iz}$$

```
In[7]:= Iz = b h^3 / 12
        z = h / 2
```

$$\text{Out[7]}= \frac{b\ h^3}{12}$$

$$\text{Out[8]}= \frac{h}{2}$$

## ■ Lösung nach h

```
In[9]:= solu = Solve[σ == σmax, h]
```

$$\text{Out[9]}= \left\{\left\{h \to -\frac{\sqrt{3}\ \sqrt{-l^2\ qo + 2\ l\ qo\ x - qo\ x^2}}{\sqrt{b}\ \sqrt{\sigma max}}\right\}, \left\{h \to \frac{\sqrt{3}\ \sqrt{-l^2\ qo + 2\ l\ qo\ x - qo\ x^2}}{\sqrt{b}\ \sqrt{\sigma max}}\right\}\right\}$$

```
In[10]:= h = h /. solu[[2]]
```

$$\text{Out[10]}= \frac{\sqrt{3}\ \sqrt{-l^2\ qo + 2\ l\ qo\ x - qo\ x^2}}{\sqrt{b}\ \sqrt{\sigma max}}$$

```
In[11]:= Quit[];
```