Remarks: See §4.4, pages 168 till 170

See §5.4, pages 310 till 367

Answer:

$$\frac{\sigma_{max}}{\tau_{max}} = 2\frac{\ell}{h} = 30$$

Explanation:

Critical loads:

$M_{max} = \frac{1}{4}F\ell$ At the force's point of application

$V_{max} = \frac{1}{2}F$ At the support points

$$\sigma_{max} = \frac{M_{max}z_{max}}{I_{zz}} = \frac{(\frac{1}{4}F\ell)\cdot\frac{1}{2}h}{\frac{1}{12}bh^3} = \frac{3}{2}\frac{F\ell}{bh}$$

$$\tau_{max} = \frac{V_{max}S_z^a}{bI_{zz}} = \frac{\frac{1}{2}F\cdot(\frac{1}{8}bh^2)}{b\cdot\frac{1}{12}bh^3} = \frac{3}{4}\frac{F}{bh}$$