

36. (a) The Young's modulus is given by

$$\begin{aligned} E &= \frac{\text{stress}}{\text{strain}} = \text{slope of the stress-strain curve} \\ &= \frac{150 \times 10^6 \text{ N/m}^2}{0.002} = 7.5 \times 10^{10} \text{ N/m}^2 . \end{aligned}$$

(b) Since the linear range of the curve extends to about $2.9 \times 10^8 \text{ N/m}^2$, this is approximately the yield strength for the material.