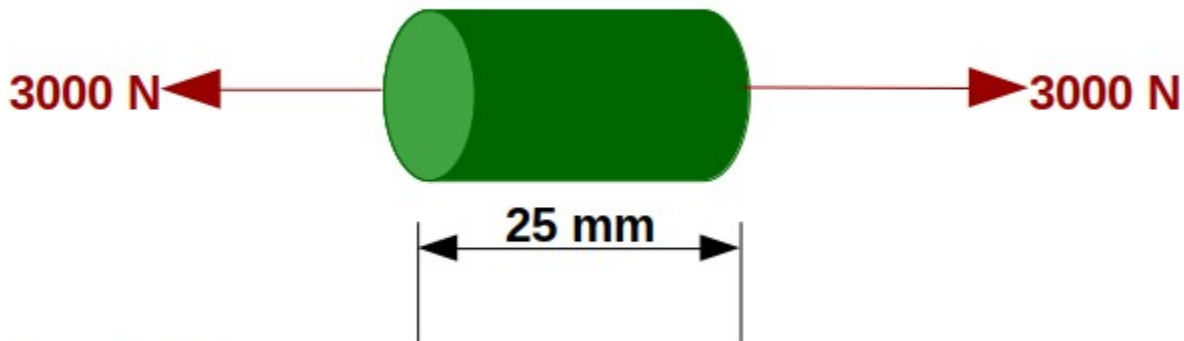


Date: 14th August 2020

A specimen has a length of 25 mm and a cross sectional area of 30 mm², and is subjected to an axial load of 3000 N as shown below. If the specimen is stretched by 2 mm and is in the elastic region), compute the following:

- (a) the axial stress (σ),*
- (b) the strain (ϵ) and,*
- (c) the modulus of elasticity (E).*

$$F = 3000 \text{ N}$$
$$A = 30 \text{ mm}^2$$



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Answers (refer to solutions for detail)

- (a) $\sigma = 100 \text{ MPa} = 0.1 \text{ GPa}$**
- (b) $\epsilon = 0.08$**
- (c) $E = 1,250 \text{ MPa} = 1.25 \text{ GPa}$**