

### ΕΝΔΕΙΚΤΙΚΕΣ ΑΠΑΝΤΗΣΕΙΣ

$$\alpha) \sigma = \frac{F}{A} \Rightarrow \sigma = \frac{F}{\frac{\pi \cdot d^2}{4}}$$

$$\Rightarrow \sigma \cdot \frac{\pi \cdot d^2}{4} = F \Rightarrow \sigma \cdot \pi \cdot d^2 = 4 \cdot F \Rightarrow 1000 \frac{daN}{cm^2} \cdot 3,14 \cdot d^2 = 4 \cdot 3140 daN \Rightarrow$$

$$3140 \frac{daN}{cm^2} \cdot d^2 = 12560 daN \Rightarrow d^2 = \frac{12560 daN}{3140 \frac{daN}{cm^2}} \Rightarrow d^2 = 4 cm^2 \Rightarrow \sqrt{d^2} = \sqrt{4 cm^2} \Rightarrow d = 2 cm$$

$$\beta) l = 15 cm = 150 mm$$

$$\varepsilon = \frac{\Delta l}{l} = \frac{0,15 mm}{150 mm} \Rightarrow \varepsilon = 0,001$$

$$\gamma) \varepsilon \% = \frac{\Delta l}{l} \cdot 100 = \frac{0,15 mm}{150 mm} \cdot 100 \Rightarrow \varepsilon = 0,1\%$$