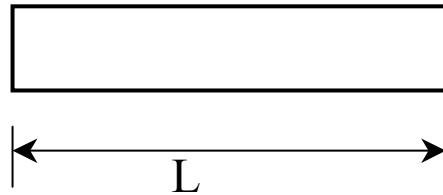


1) A bar is sitting on a frictionless table. The temperature is increased by an amount ΔT . How does the shape of the bar change?



What is the axial strain, ϵ , in the bar?

What is the axial stress, σ , in the bar?

(Define: α = coefficient of thermal expansion)

This is called “free thermal expansion”

2) At room temperature, the same bar just barely fits between the two walls. The temperature is increased by an amount ΔT . How does the shape of the bar change?

What is the axial strain, ϵ , in the bar?

What is the axial stress, σ , in the bar?

