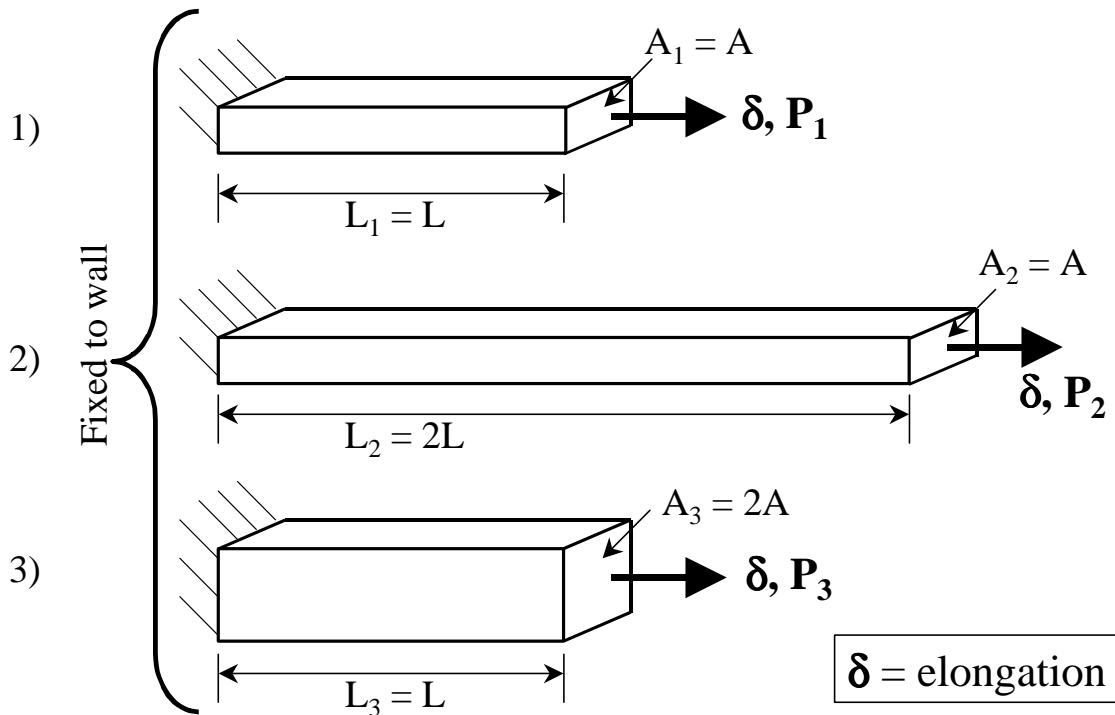


Three bars are made of the same material. An external axial load is applied to each bar (loads are  $P_1$ ,  $P_2$ , and  $P_3$ ), to cause the *same elongation*,  $\delta$ , in each bar.



Which bar requires the largest axial load?

Which bar requires the smallest axial load?

Bar	1	2	3
Length	L	2L	L
Area	A	A	2A
I) Elongation	$\delta$	$\delta$	$\delta$
I) Force			
II) Elongation	$2\delta$	$2\delta$	$2\delta$
II) Force			
I) Stress, $\sigma$			
I) Strain, $\epsilon$			
II) Stress, $\sigma$			
II) Strain, $\epsilon$			