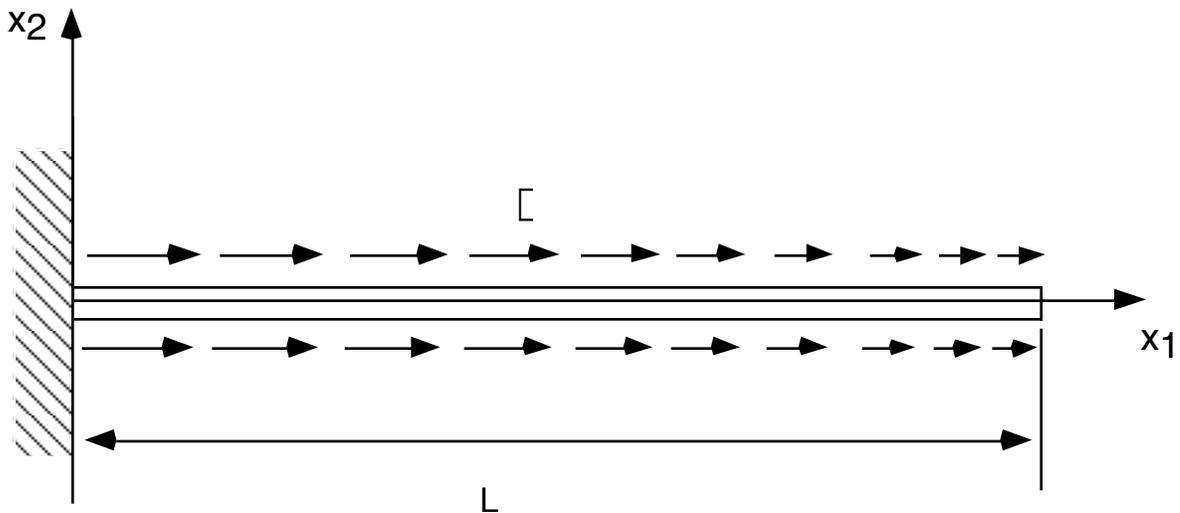


M16 Concept Question 1

A bar is clamped at one end and is loaded so that it has an axial strain distribution of

$\epsilon_{11} = \epsilon_0 \left[1 + \frac{x}{L} \right]$, where ϵ_0 is a constant. What is the axial displacement of the free end of the bar?



1) $\Delta = \epsilon_0 L$

2) $\Delta = \frac{1}{2} \epsilon_0 L$

3) $\Delta = \frac{1}{2} \epsilon_0^2 L$

4) $\Delta = \epsilon_0$

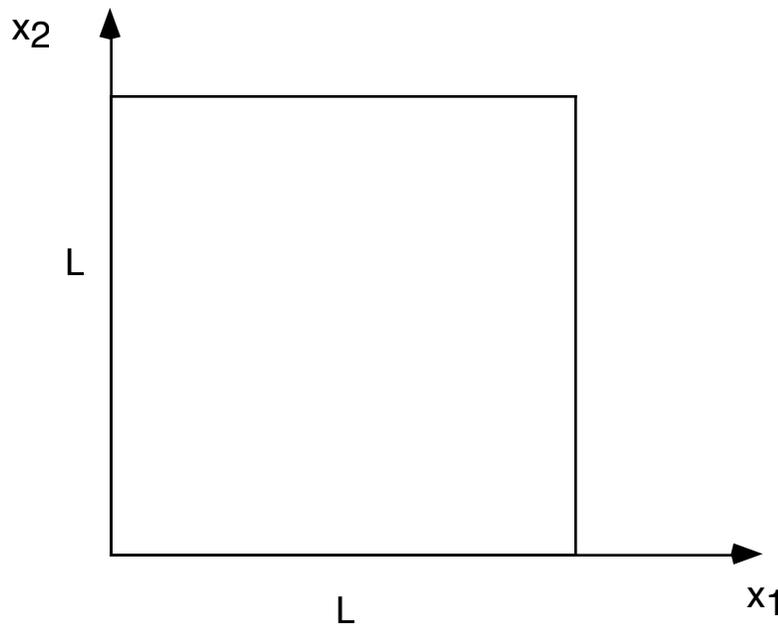
5) $\Delta = 2 \epsilon_0 L$

6) Another answer

7) DNK/DNU

M16 Concept Question 2

A square plate ($L \times L$) of material has a displacement distribution given by $u_1 = ax_1x_2$ and $u_2 = bx_1$ where a and b are constants. What is the shear strain, γ_{12} at (L, L) ?



1) $\gamma_{12} = \frac{1}{2}(aL)$

2) $\gamma_{12} = \frac{1}{2}(aL + b)$

3) $\gamma_{12} = b$

4) $\gamma_{12} = aL + bL$

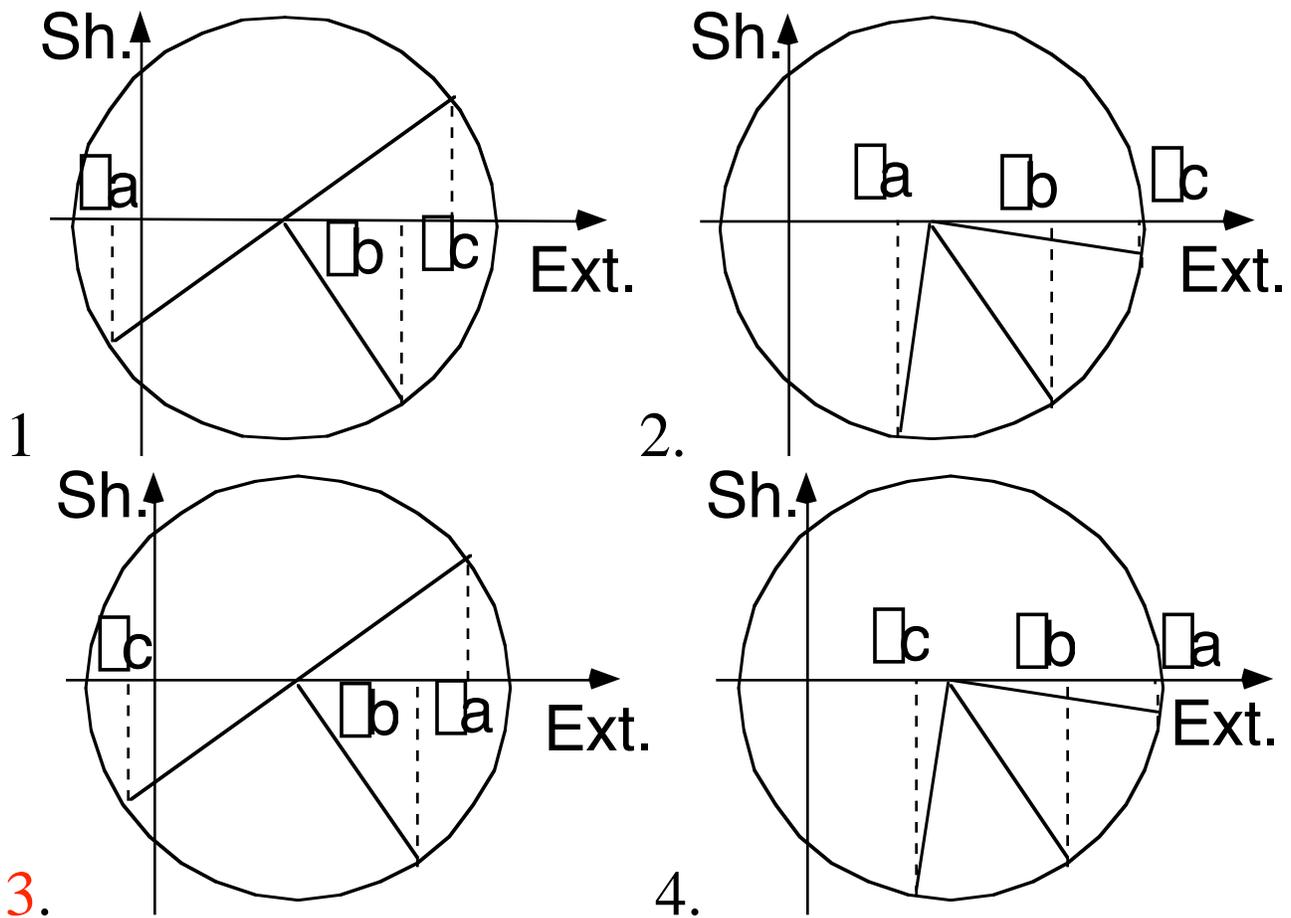
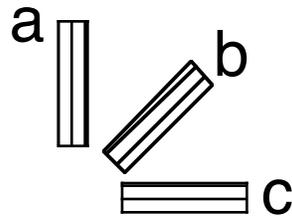
5) $\gamma_{12} = \frac{1}{2}(ax_1 + b)$

6) Another answer

7) DNK/DNU

M17 Concept Question 2

A common way to characterize a state of 2-D strain is to use a strain gauge "rosette" with three gauges mounted at 0° , 45° and 90° . Which is a potentially correct Mohr's circle for the rosette configuration shown below?



5. None of the above
6. DNK/DNU