

QUIZ on Lecture P1_Wk4_L1

1. What is the key assumption required to calculate the shape of a microcantilever when it is subjected to a point force at the end?
 - a) the anisotropy in the elastic modulus that when the microcantilever is bent
 - b) the absence of a neutral axis
 - c) the internal stress that develops to balance the external moment generated by the applied force
 - d) the important role played by the acceleration of gravity
2. If the equation of a line is given by $y(x)=1.5x^2-0.1x+7$, approximately what is the radius of curvature κ near $x=0$?
 - a) about 1.5
 - b) about -0.1
 - c) about 3
 - d) κ cannot be defined for the line given by the above equation
3. Consider two microcantilevers with the same width and thickness but one has a length L and the other has a length $2L$. If the same force is applied to the free end of each microcantilever, how much greater will the displacement q at the free end of the $2L$ micro-cantilever be compared to the displacement at the free end of the microcantilever of length L ?
 - a) $q_{2L} = 2q_L$
 - b) $q_{2L} = 0.5 \cdot q_L$
 - c) $q_{2L} = 4q_L$
 - d) $q_{2L} = 8q_L$
4. If a microcantilever is displaced from its equilibrium position by an external force which is suddenly removed, the microcantilever is likely to
 - a) maintain its displaced position
 - b) oscillate about its equilibrium position at a well-defined frequency
 - c) oscillate about its displaced position at a well-defined frequency
 - d) break in half