**QUESTIONS TO HAND IN – EXPERIMENT 18**

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**LAB INSTRUCTOR\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_LAB DAY/TIME\_\_\_\_\_\_\_\_\_\_ \_ \_\_**

**1.** Assuming that the moment function *M(x)* is given correctly by eqn. (2), integrate the flexure equation (eqn. (1)) to obtain an expression for the first derivative of the flexure *y/(x).* Remember that when an indefinite integral is solved an undetermined constant of integration results.

**2.** Use the fact that the slope of the rod (the derivative of the flexure) must be zero at the midpoint () to evaluate the constant of integration from question 1 above.

**3.** Integrate *y/(x)*to obtain the functional form of the flexure itself *y(x)*. Again, there will a constant of integration to evaluate.

**4.** Evaluate this second integration constant by applying the boundary conditions on the flexure: **.**

**5.** Finally, show how eqn. (3) is derived by evaluating the flexure at the rod's midpoint.