

Your group will be given one of the following partial derivatives:

$$a) \left( \frac{\partial V}{\partial p} \right)_T \quad b) \left( \frac{\partial U}{\partial p} \right)_S \quad c) \left( \frac{\partial T}{\partial V} \right)_S \quad d) \left( \frac{\partial V}{\partial T} \right)_p \quad e) \left( \frac{\partial U}{\partial T} \right)_V \quad (1)$$

$$f) \left( \frac{\partial p}{\partial V} \right)_T \quad g) \left( \frac{\partial V}{\partial T} \right)_S \quad h) \left( \frac{\partial T}{\partial V} \right)_p \quad i) \left( \frac{\partial T}{\partial U} \right)_V \quad j) \left( \frac{\partial V}{\partial p} \right)_S \quad (2)$$

In your group, design an experiment to measure this derivative. Draw a sketch of the apparatus and describe how to convert directly measured data into a numerical value for the derivative.

If you finish with your derivative, you can try designing an experiment for the next derivative in the list.