Name: _____

Quantifying Change

Working in small groups (2 or 3 people), solve as many of the problems below as possible. Try to resolve questions within the group before asking for help. Each group member should then write up solutions in their own words.

Orient: The plot shows various thermodynamic quantities for water vapor in an insulated piston (cylindrical thermos with a movable top) at different states. From state (point) A to state (point) B, estimate the following quantities:

Verbal Description	Symbol	Estimate (with Units)
Change in volume:	$\Delta V_{A \to B}$	
Change in entropy:	$\Delta S_{A \to B}$	
Change in temperature:	$\Delta T_{A \to B}$	
Change in pressure:	$\Delta p_{A \to B}$	
Change in internal energy:	$\Delta U_{A \to B}$	

Explore: Pick two of the variables in the table and determine the rate of change of one with respect to the other from A to B. What experiment could you do to measure this rate?

Interpret: Determine the reciprocal of the rate you calculated. How would you physically interpret this number?

Reinterpret: How does the rate you previously calculated change if instead you went from state B to state A?

Activity Evaluation
What was the main point of this activity?

Describe one thing you understand as a result of this activity.

Describe one thing that is confusing after completing this activity.