1. Match each flow visualization tool (at left) to its definition (at center) and “Experimental/Theoretical” characteristic (at right) by drawing a continuous connecting line:

- **PATHLINE**
  - Line formed by instantaneous velocity tangents in a fluid field
  - THEORETICAL

- **STREAMLINE**
  - Line formed by movement of a specific fluid particle or pulse of dye in a fluid field
  - EXPERIMENTAL

- **STREAKLINE**
  - Line formed by set of multiple particles that all pass through a specific point at different times

2. What does a Pitot-static tube directly measure? What can you calculate from the direct measurement?

3. The material derivative (a.k.a. substantial derivative) \( \frac{D()}{Dt} \) contains 2 major parts. Name the 2 parts and describe their meanings.