Name: _____

CVEN 311-501 – "Fluid Dynamics"
Quiz #3 – Fall 2010
Prof. Brumbelow
October 15, 2010

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

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.