

(1) When are the material and local derivatives (of some property of a fluid) equal?

- A. When the fluid at the location and time of measurement isn't moving.
- B. When the property isn't changing at the location of interest.
- C. When the property of interest is conserved by the fluid parcel.
- D. When the observer/instrument is "following" a fluid parcel.
- E. Never—they are mutually exclusive types of derivatives.

(2) When are the total and material derivatives (of some property of a fluid) equal?

- A. When the fluid at the location and time of measurement isn't moving.
- B. When the property isn't changing at the location of interest.
- C. When the property of interest is conserved by the fluid parcel.
- D. When the observer/instrument is "following" a fluid parcel.
- E. Never—they are mutually exclusive types of derivatives.

(3) When are the total, material, and local derivatives (of some property of a fluid) equal?

- A. When the fluid at the location and time of measurement isn't moving.
- B. When the property of interest is conserved by the fluid parcel.
- C. When neither the observer/instrument nor the fluid parcel are moving.
- D. When the observer/instrument is "following" a fluid parcel.
- E. Never—they are mutually exclusive types of derivatives.