Conservation of linear momentum

$$\frac{d}{dt}(\vec{P}_{sys}) = \sum \vec{F} + \sum_{in} \dot{m}\vec{V} - \sum_{out} \dot{m}\vec{V}$$

1) A closer look at $\vec{P}_{sys}$
   a. System is a **particle**

   b. System has **uniform velocity**

   c. System is a **general closed system**

Then

2) A closer look at ***F*** (Rate of LM transport at _____ _____)

a. **Body forces** ("Forces at a _____")

-
-
-

No _____ is needed, but the forces still ____ _____ _____!

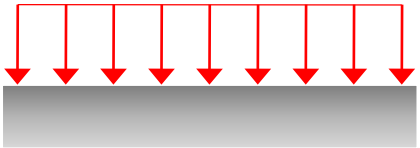
b. **Contact forces** (Come from _____ *between* bodies in contact.)

Drawn at:

c. Contact **stresses**

i. Shear

ii. Normal



3) A closer look at $\dot{m}\vec{V}$ (Rate of LM transport at _____ _____)

$$\dot{m}_{in} \Rightarrow \sum \dot{m}_{in}\vec{V}$$

$$\dot{m}_{out} \Rightarrow \sum \dot{m}_{out}\vec{V}$$

These are _____. Thus they have _____ in the component equations and can make entire term _____ or _____.