

①  $f(x) = \cos(\bar{x}) - \sin(\bar{x})(x - \bar{x})$

•  $\bar{x} = 0 \Rightarrow f(0) = \overset{1}{\cancel{\cos}(0)} - \overset{0}{\cancel{\sin}(0)}(x - 0) = 0$

•  $\bar{x} = \frac{\pi}{4} \Rightarrow f\left(\frac{\pi}{4}\right) = \cos\left(\frac{\pi}{4}\right) - \sin\left(\frac{\pi}{4}\right)\left(x - \frac{\pi}{4}\right) =$   
 $= \frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2}\left(x - \frac{\pi}{4}\right) = \underline{\underline{\frac{\sqrt{2}}{2}\left(1 - x + \frac{\pi}{4}\right)}}$

②  $f(\bar{\mu}, \dot{\bar{v}}, \bar{r}, \dot{\bar{r}}, \bar{x}) = \bar{F} - m\bar{r}\bar{\mu} + m\bar{x}\dot{\bar{r}} + m\bar{v} - m\dot{\bar{v}} - m\bar{r}(\mu - \bar{\mu}) - m\bar{\mu}(r - \bar{r}) +$   
 $+ m\bar{x}(\dot{r} - \dot{\bar{r}}) + m\dot{\bar{r}}(x - \bar{x})$

• sendo  $\dot{\bar{v}} = \bar{r} = \dot{\bar{r}} = 0$ , chegamos em:

$$f(\bar{\mu}, \dot{\bar{v}}, \bar{r}, \dot{\bar{r}}, \bar{x}) = \underline{\underline{m\dot{\bar{v}} + m\dot{\bar{r}}x - m\bar{\mu}r}}$$