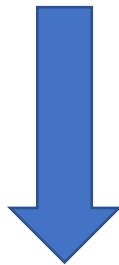


$$2 L_1 L c_2 \cos (\varphi_2) \dot{\varphi}_1 + L_1 L c_2 \cos (\varphi_2) \dot{\varphi}_2$$

$$\frac{d}{dt}$$



$$2 L_1 L c_2 \cos (\varphi_2) \ddot{\varphi}_1 - L_1 L c_2 \sin (\varphi_2) (\dot{\varphi}_2)^2 + L_1 L c_2 \cos (\varphi_2) \ddot{\varphi}_2 - L_1 L c_2 \sin (\varphi_2) \dot{\varphi}_2 \dot{\varphi}_1$$

$$L_1 L c_2 \cos(\varphi_2) \dot{\varphi}_2$$

$$\frac{d}{dt} \downarrow$$

$$L_1 L c_2 \cos(\varphi_2) \ddot{\varphi}_2 - L_1 L c_2 \sin(\varphi_2) (\dot{\varphi}_2)^2$$

$$2 L_1 L c_2 \cos(\varphi_2) \dot{\varphi}_1$$

$$\frac{d}{dt} \downarrow$$

$$2 L_1 L c_2 \cos(\varphi_2) \ddot{\varphi}_1 - L_1 L c_2 \sin(\varphi_2) \dot{\varphi}_2 \dot{\varphi}_1$$