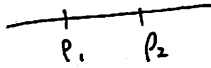
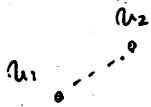


$$u = u_1 + \frac{u_2 - u_1}{p_2 - p_1}(p - p_1)$$



$$V_2 - V_1 = \int_{p_1}^{p_2} u \, dp = \left[\left(u_1 - \frac{u_2 - u_1}{p_2 - p_1} p_1 \right) p + \frac{u_2 - u_1}{p_2 - p_1} p^2 \right]_{p_1}^{p_2}$$

$$= u_1(p_2 - p_1) - (u_2 - u_1)p_1 + (u_2 - u_1)(p_2 + p_1)$$

$$= u_1(p_2 - p_1 + p_1 - p_2 + p_1) + u_2(-p_1 + p_2 + p_1)$$

$$= -u_1 p_1 + u_2 p_2$$

$$u_2 = \frac{V_2 - V_1 + u_1 p_1}{p_2}$$

$$\frac{V_2 - V_1 + u_1 p_1}{u_2}$$

$$u = u_1 + \frac{du}{dp}(p - p_1)$$

$$\frac{V_2 - V_1}{\frac{\Delta V}{c}} = \int_{p_1}^{p_2} u \, dp = \left[\left(u_1 - \frac{du}{dp} p_1 \right) p + \frac{du}{dp} p^2 \right]_{p_1}^{p_2}$$

$$= u_1(p_2 - p_1) - \frac{du}{dp} p_1(p_2 - p_1) + \frac{du}{dp}(p_2^2 - p_1^2)$$

$$= \frac{du}{dp} p_2^2 + \underbrace{\left(u_1 - \frac{du}{dp} p_1 \right)}_b p_2 - \underbrace{u_1 p_1}_a$$