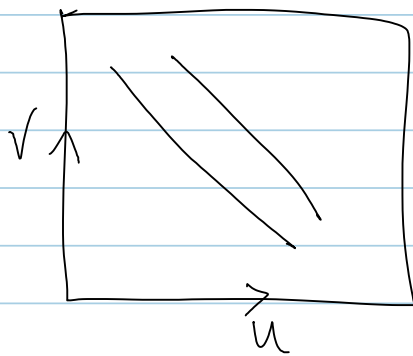


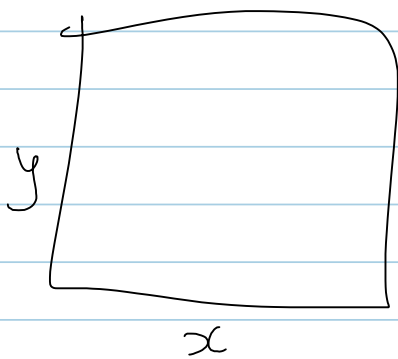
# Hour 6 Scratch

September-19-12  
9:03 PM



$$W = du + dv$$

$$F: (x, y) \rightarrow (F(x), g(y))$$



$$\begin{aligned} F^* W &= F^* du + F^* dv = \\ &= dF^* u + dF^* v = \\ &= dF + dg = \\ &= f_x dx + g_y dy \end{aligned}$$

$$(F, g) \quad F = F + g \quad \nabla F = \begin{pmatrix} F_x \\ g_y \end{pmatrix}$$

$$0 = \nabla F \cdot \begin{pmatrix} 1 \\ y' \end{pmatrix} = f_x + g_y y' = 0$$