$$(\text{Next}) \iff \sum_{j} \sum_{i} \left( \frac{\partial w^{j}}{\partial x^{i}} v^{i} - W^{i} \frac{\partial v^{j}}{\partial x^{i}} \right) \frac{\partial}{\partial x^{j}}.$$

$$\iff \sum_{j} \sum_{i} \left( \frac{\partial \left( \sum_{k} 3^{j}_{jk} x^{k} + W^{j}_{j} \right)}{\partial x^{i}} \sum_{k} \left( B^{i}_{k} x^{k} + W^{i}_{j} \right) \sum_{k} \left( B^{i}_{k} x^{k} + W^{i}_{k} \right) \frac{\partial}{\partial x^{i}} \right) \frac{\partial}{\partial x^{i}}.$$

$$\iff \sum_{j} \sum_{i} \left( B^{j}_{ji} \left( \sum_{k} B^{j}_{ik} E^{j}_{ik} x^{k} + B^{j}_{ji} w^{i} - \sum_{k} B^{j}_{ik} E^{j}_{ji} - W^{i}_{i} B^{j}_{ji} \right) \right) \frac{\partial}{\partial x^{j}} = 0$$

$$\iff \sum_{j} \left( \sum_{k} \left( B^{j}_{k} B^{j}_{jk} x^{k} + B^{j}_{ji} w^{i} - \sum_{k} B^{j}_{ik} B^{j}_{ji} - W^{i}_{i} B^{j}_{ji} \right) \right) \frac{\partial}{\partial x^{j}} = 0$$

$$\iff \sum_{j} \left( \sum_{k} \left( B^{j}_{k} B^{j}_{jk} x^{k} - \sum_{k} \left( B^{j}_{k} B^{j}_{jk} x^{k} \right) \frac{\partial}{\partial x^{j}} + B^{i}_{i} w^{i} - B^{i}_{i} w^{i} - B^{i}_{i} w^{i} - B^{i}_{i} w^{i} \right) \right) \frac{\partial}{\partial x^{j}} = 0$$

$$\iff \sum_{j} \left( B^{j}_{k} B^{j}_{jk} x^{k} - \sum_{k} \left( B^{j}_{k} B^{j}_{jk} x^{k} \right) \frac{\partial}{\partial x^{j}} + B^{i}_{i} w^{i} - B^{i}_{i} w^{i} - B^{i}_{i} w^{i} \right) = 0$$

$$\iff (B^{j}_{k} B^{j}_{k} B^{j}_{k} B^{j}_{k} x^{k} + B^{j}_{k} W^{i}_{k} B^{j}_{k} B^$$

B'B = BB'