$$i) \qquad \left(\frac{\partial \ell_i}{\partial f_0}\right) \stackrel{\partial h_1}{\underbrace{\partial f_0}} \left(\frac{\partial \ell_i}{\partial h_1}\right) \stackrel{\partial f_1}{\underbrace{\partial h_1}} \left(\frac{\partial \ell_i}{\partial f_1}\right) \stackrel{\partial h_2}{\underbrace{\partial f_1}} \left(\frac{\partial \ell_i}{\partial h_2}\right) \stackrel{\partial f_2}{\underbrace{\partial h_2}} \left(\frac{\partial \ell_i}{\partial f_2}\right) \stackrel{\partial h_3}{\underbrace{\partial f_2}} \left(\frac{\partial \ell_i}{\partial h_3}\right) \stackrel{\partial f_3}{\underbrace{\partial h_3}} \left(\frac{\partial \ell_i}{\partial f_3}\right) \stackrel{\partial h_3}{\underbrace{\partial h_3}} \left(\frac{\partial \ell_i}{\partial f_3}\right) \stackrel{\partial h_3}{\underbrace{\partial h_3}} \left(\frac{\partial \ell_i}{\partial h_3}\right) \stackrel{\partial h_3}{\underbrace{\partial h_3}} \left(\frac{\partial \ell_i}{$$