

Trace	Elementary Function	Current Value	Elementary Function Derivative	∇_x Value	∇_y Value
v_1	x	x	\dot{x}	1	0
v_2	$w_{11}v_1$	$w_{11}x$	$w_{11}\dot{v}_1$	w_{11}	0
v_3	y	y	\dot{y}	0	1
v_4	$w_{12}v_3$	$w_{12}y$	$w_{12}\dot{v}_3$	0	w_{12}
v_5	$v_2 + v_4$	$w_{11}x + w_{12}y$	$\dot{v}_2 + \dot{v}_4$	w_{11}	w_{12}
v_6	$z(v_5)$	$z(w_{11}x + w_{12}y)$	$z'(v_5)\dot{v}_5$	$z'(w_{11}x + w_{12}y)w_{11}$	$z'(w_{11}x + w_{12}y)w_{12}$
v_7	$w_{\text{out},1}v_6$	$w_{\text{out},1}z(w_{11}x + w_{12}y)$	$w_{\text{out},1}\dot{v}_6$	$w_{\text{out},1}z'(w_{11}x + w_{12}y)w_{11}$	$w_{\text{out},1}z'(w_{11}x + w_{12}y)w_{12}$
v_8	$w_{21}v_1$	$w_{21}x$	$w_{21}\dot{v}_1$	w_{21}	0
v_9	$w_{22}v_3$	$w_{22}y$	$w_{22}\dot{v}_3$	0	w_{22}
v_{10}	$v_8 + v_9$	$w_{21}x + w_{22}y$	$\dot{v}_8 + \dot{v}_9$	w_{21}	w_{22}
v_{11}	$z(v_{10})$	$z(w_{21}x + w_{22}y)$	$z'(v_{10})\dot{v}_{10}$	$z'(w_{21}x + w_{22}y)w_{21}$	$z'(w_{21}x + w_{22}y)w_{22}$
v_{12}	$w_{\text{out},2}v_{11}$	$w_{\text{out},2}z(w_{21}x + w_{22}y)$	$w_{\text{out},2}\dot{v}_{11}$	$w_{\text{out},2}z'(w_{21}x + w_{22}y)w_{21}$	$w_{\text{out},2}z'(w_{21}x + w_{22}y)w_{22}$
v_{13}, f	$v_7 + v_{12}$	$w_{\text{out},1}z(w_{11}x + w_{12}y) + w_{\text{out},2}z(w_{21}x + w_{22}y)$	$\dot{v}_7 + \dot{v}_{12}$	$w_{\text{out},1}z'(w_{11}x + w_{12}y)w_{11} + w_{\text{out},2}z'(w_{21}x + w_{22}y)w_{21}$	$w_{\text{out},1}z'(w_{11}x + w_{12}y)w_{12} + w_{\text{out},2}z'(w_{21}x + w_{22}y)w_{22}$