

- a) $g(v_1 \cdot 1 + v_2 \cdot z_1 + v_3 \cdot z_2) \rightarrow v_1 + (w_1 + w_3 \cdot x_1 + w_5 \cdot x_2) \cdot v_2 + (w_2 + w_4 \cdot x_1 + w_6 \cdot x_2) \cdot v_3$
- b) $M = v_1 + v_2 \cdot w_1 + v_3 \cdot w_2$, $n = v_2 \cdot w_3 + v_3 \cdot w_4$, $o = v_2 \cdot w_5 + v_3 \cdot w_6$
- c) Because it is linear, adding more layers does not change the expressive power.
- d) No, because it is non linear
- e) Expressive power increases with added layers
- f) Differentiable, Non linearity