

$$\begin{cases} x_1 = s(s(\text{zero})) \\ \text{zero} = s(x) \end{cases}$$

$$x_1 = s(s(s(s(\text{zero}))))$$

fail

$$\text{plus}(s(s(\text{zero})), s(x), s(s(s(s(\text{zero}))))))$$

$$\begin{cases} x_1 = s(s(\text{zero})) \\ s(y_1) = s(x) \\ s(z_1) = s(s(s(s(\text{zero})))) \end{cases}$$

$$\begin{cases} x_2 = s(s(\text{zero})) \\ \text{zero} = y_1 \\ x_2 = s(s(s(\text{zero}))) \end{cases}$$

fail

$$\text{plus}(s(s(\text{zero})), y_1, s(s(s(\text{zero}))))$$

$$\begin{cases} x_2 = s(s(\text{zero})) \\ s(y_2) = y_1 \\ s(z_2) = s(s(s(\text{zero}))) \end{cases}$$

$$\text{plus}(s(s(\text{zero})), y_2, s(s(\text{zero})))$$

$$\begin{cases} x_3 = s(s(\text{zero})) \\ \text{zero} = y_2 \end{cases}$$

$$\begin{cases} x_3 = s(s(\text{zero})), s(y_3) = y_2 \\ s(z_3) = s(\text{zero}) \end{cases}$$

$$\text{natural-number}(s(s(\text{zero})))$$

$$\text{plus}(s(s(\text{zero})), y_3, \text{zero})$$

$$\{s(x_4) = s(s(\text{zero}))\}$$

$$\text{natural-number}(s(\text{zero}))$$

fail

$$\begin{cases} x_4 = s(s(\text{zero})) \\ \text{zero} = y_3 \\ x_4 = \text{zero} \end{cases}$$

fail

$$\begin{cases} x_4 = s(s(\text{zero})) \\ s(y_4) = y_3 \\ s(z_4) = \text{zero} \end{cases}$$

fail

$$\{s(x_5) = s(\text{zero})\}$$

$$\text{natural-number}(\text{zero})$$

fail

true