Synthesized solution for benchmark `01asendrecv.c`

solution

- (Partial), cond b_{11}: `b > 0`
  - *Case* b_{11} :
    - $k_1 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot 1 \cdot 1 \cdot (b_{\texttt{b > 0}} \cdot C_{\texttt{n = constructReply();}} \cdot S_{\texttt{() = send(n);}} \cdot 1 + \neg b_{\texttt{b > 0}} \cdot 1) \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
    - $k_2 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot (b_{\texttt{b > 0}} \cdot K_{\texttt{auth = check(b);}} \cdot (c_{\texttt{auth > 0}} \cdot C_{\texttt{n = constructReply();}} \cdot B_{\texttt{() = sendA(n);}} + \neg c_{\texttt{auth > 0}} \cdot 1) + \neg b_{\texttt{b > 0}} \cdot I_{\texttt{() = log(b);}}) \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
  - (Partial), cond b_{26}: `b > 0`
    - *Case* b_{26} :
      - $k_1 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot 1 \cdot 1 \cdot 1 \cdot C_{\texttt{n = constructReply();}} \cdot J_{\texttt{() = send(n);}} \cdot 1 \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
      - $k_2 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot (b_{\texttt{b > 0}} \cdot K_{\texttt{auth = check(b);}} \cdot (c_{\texttt{auth > 0}} \cdot C_{\texttt{n = constructReply();}} \cdot B_{\texttt{() = sendA(n);}} + \neg c_{\texttt{auth > 0}} \cdot 1) + \neg b_{\texttt{b > 0}} \cdot I_{\texttt{() = log(b);}}) \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
    - (Partial), cond c_{23}: `auth > 0`
      - *Case* c_{23} :
        - $k_1 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot 1 \cdot 1 \cdot 1 \cdot C_{\texttt{n = constructReply();}} \cdot J_{\texttt{() = send(n);}} \cdot 1 \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
        - $k_2 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot 1 \cdot M_{\texttt{auth = check(b);}} \cdot (c_{\texttt{auth > 0}} \cdot C_{\texttt{n = constructReply();}} \cdot B_{\texttt{() = sendA(n);}} + \neg c_{\texttt{auth > 0}} \cdot 1) \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
      - AComplete
        - *Axioms* : $\{I = 1, J = 1, M = 1, P = 1\}$
          - $k_1 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot 1 \cdot 1 \cdot 1 \cdot C_{\texttt{n = constructReply();}} \cdot J_{\texttt{() = send(n);}} \cdot 1 \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
          - $k_2 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot 1 \cdot M_{\texttt{auth = check(b);}} \cdot 1 \cdot C_{\texttt{n = constructReply();}} \cdot P_{\texttt{() = sendA(n);}} \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
  - *Case* $\neg b_{11}$:
    - $k_1 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot 1 \cdot 1 \cdot (b_{\texttt{b > 0}} \cdot C_{\texttt{n = constructReply();}} \cdot S_{\texttt{() = send(n);}} \cdot 1 + \neg b_{\texttt{b > 0}} \cdot 1) \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
    - $k_2 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot (b_{\texttt{b > 0}} \cdot K_{\texttt{auth = check(b);}} \cdot (c_{\texttt{auth > 0}} \cdot C_{\texttt{n = constructReply();}} \cdot B_{\texttt{() = sendA(n);}} + \neg c_{\texttt{auth > 0}} \cdot 1) + \neg b_{\texttt{b > 0}} \cdot I_{\texttt{() = log(b);}}) \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
  - (Partial), cond c_{23}: `auth > 0`
    - *Case* c_{23} :
      - $k_1 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
      - $k_2 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot (b_{\texttt{b > 0}} \cdot J_{\texttt{auth = check(b);}} \cdot (c_{\texttt{auth > 0}} \cdot C_{\texttt{n = constructReply();}} \cdot B_{\texttt{() = sendA(n);}} + \neg c_{\texttt{auth > 0}} \cdot 1) + \neg b_{\texttt{b > 0}} \cdot I_{\texttt{() = log(b);}}) \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
    - (Partial), cond b_{26}: `b > 0`
      - *Case* $\neg b_{26}$:
        - $k_1 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
        - $k_2 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot (b_{\texttt{b > 0}} \cdot J_{\texttt{auth = check(b);}} \cdot 1 \cdot C_{\texttt{n = constructReply();}} \cdot B_{\texttt{() = sendA(n);}} + \neg b_{\texttt{b > 0}} \cdot I_{\texttt{() = log(b);}}) \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
      - AComplete
        - *Axioms* : $\{I = 1, J = 1\}$
          - $k_1 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
          - $k_2 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot 1 \cdot I_{\texttt{() = log(b);}} \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
    - *Case* $\neg c_{23}$:
      - $k_1 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
      - $k_2 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot (b_{\texttt{b > 0}} \cdot J_{\texttt{auth = check(b);}} \cdot (c_{\texttt{auth > 0}} \cdot C_{\texttt{n = constructReply();}} \cdot B_{\texttt{() = sendA(n);}} + \neg c_{\texttt{auth > 0}} \cdot 1) + \neg b_{\texttt{b > 0}} \cdot I_{\texttt{() = log(b);}}) \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
    - AComplete
      - *Axioms* : $\{I = 1, J = 1\}$
        - $k_1 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$
        - $k_2 = (a_{\texttt{x > 0}} \cdot E_{\texttt{b = recv();}} \cdot (b_{\texttt{b > 0}} \cdot J_{\texttt{auth = check(b);}} \cdot 1 \cdot 1 + \neg b_{\texttt{b > 0}} \cdot I_{\texttt{() = log(b);}}) \cdot X_{\texttt{x = x -\_i,? 1;}}) * \neg a_{\texttt{x > 0}}$

Remaining 37 solutions ommitted for brevity.