

Synthesized solution for benchmark 01loopprint.c

```

solution
├─ (Complete), cond  $c_{17}$ :  $a > 5$ 
├─  $\left\{ \begin{array}{l} \text{Case } c_{17} : \\ k_1 = ((a_5 \vee b_6) \cdot P_{()} = \text{printf}(i, j); \cdot I_i = i + i, ? \quad 1; \cdot J_j = j + i, ? \quad 1;) * (\neg a_5 \wedge \neg b_6) \\ k_2 = ((a_{13} \vee b_{14}) \cdot D_a = i + i, ? \quad j; \cdot P_{()} = \text{printf}(i, j); \cdot I_i = i + i, ? \quad 1; \cdot J_j = j + i, ? \quad 1; \cdot (c_{17} \cdot V_{fv.1} = 0; \cdot T_{()} = \text{printf}(a, fv.1); + \neg c_{17} \cdot 1)) * (\neg a_{13} \wedge \neg b_{14}) \end{array} \right.$ 
├─ AComplete
├─  $\left\{ \begin{array}{l} \text{Axioms} : \{D = 1, E = 1, G = 1\} \\ k_1 = ((a_5 \vee b_6) \cdot P_{()} = \text{printf}(i, j); \cdot I_i = i + i, ? \quad 1; \cdot J_j = j + i, ? \quad 1;) * (\neg a_5 \wedge \neg b_6) \\ k_2 = ((a_{13} \vee b_{14}) \cdot D_a = i + i, ? \quad j; \cdot P_{()} = \text{printf}(i, j); \cdot I_i = i + i, ? \quad 1; \cdot J_j = j + i, ? \quad 1; \cdot 1 \cdot E_{fv.1} = 0; \cdot G_{()} = \text{printf}(a, fv.1);) * (\neg a_{13} \wedge \neg b_{14}) \end{array} \right.$ 
├─  $\left\{ \begin{array}{l} \text{Case } \neg c_{17} : \\ k_1 = ((a_5 \vee b_6) \cdot P_{()} = \text{printf}(i, j); \cdot I_i = i + i, ? \quad 1; \cdot J_j = j + i, ? \quad 1;) * (\neg a_5 \wedge \neg b_6) \\ k_2 = ((a_{13} \vee b_{14}) \cdot D_a = i + i, ? \quad j; \cdot P_{()} = \text{printf}(i, j); \cdot I_i = i + i, ? \quad 1; \cdot J_j = j + i, ? \quad 1; \cdot (c_{17} \cdot V_{fv.1} = 0; \cdot T_{()} = \text{printf}(a, fv.1); + \neg c_{17} \cdot 1)) * (\neg a_{13} \wedge \neg b_{14}) \end{array} \right.$ 
├─ AComplete
├─  $\left\{ \begin{array}{l} \text{Axioms} : \{D = 1\} \\ k_1 = ((a_5 \vee b_6) \cdot P_{()} = \text{printf}(i, j); \cdot I_i = i + i, ? \quad 1; \cdot J_j = j + i, ? \quad 1;) * (\neg a_5 \wedge \neg b_6) \\ k_2 = ((a_{13} \vee b_{14}) \cdot D_a = i + i, ? \quad j; \cdot P_{()} = \text{printf}(i, j); \cdot I_i = i + i, ? \quad 1; \cdot J_j = j + i, ? \quad 1; \cdot 1 \cdot 1) * (\neg a_{13} \wedge \neg b_{14}) \end{array} \right.$ 

```

Remaining 10 solutions omitted for brevity.