Given clauses (ci are the names of the clauses).

c1 : ¬x1 ∨ x2

c2 : ¬x1 ∨ x3 ∨ x9

c3 : ¬x2 ∨ ¬x3 ∨ x4

c4 : ¬x4 ∨ x5 ∨ x10

c5 : ¬x4 ∨ x6 ∨ x11

c6 : ¬x5 ∨ ¬x6

c7 : x1 ∨ x7 ∨ ¬x12

c8 : x1 ∨ x8

c9 : ¬x7 ∨ ¬x8 ∨ ¬x13

Draw the implication graph for assignment ¬x9, ¬x10, ¬x11, x12, x13, x1.

Using graphviz

```
digraph G {
   rankdir=TB;

   node [shape=ellipse];

   x1    [label="x1 (Decision)", shape=doublecircle, style=bold];
   n_x9  [label="¬x9 (Assign)",  shape=doublecircle, style=bold];
   n_x10 [label="¬x10 (Assign)", shape=doublecircle, style=bold];
   n_x11 [label="¬x11 (Assign)", shape=doublecircle, style=bold];
   x12   [label="x12 (Assign)",  shape=doublecircle, style=bold];
   x13   [label="x13 (Assign)",  shape=doublecircle, style=bold];

   // default elipse
   x2 [label="x2"];
   x3 [label="x3"];
   x4 [label="x4"];
   x5 [label="x5"];
   x6 [label="x6"];
```

```
    // Conflict --> box
    conflict [label="⊥ (Conflict)", shape=box];

    // Implications
    x1 -> x2 [label="c1"];
    x1 -> x3 [label="c2"];
    n_x9 -> x3 [label="c2"];
    x2 -> x4 [label="c3"];
    x3 -> x4 [label="c3"];
    x4 -> x5 [label="c4"];
    n_x10 -> x5 [label="c4"];
    x4 -> x6 [label="c5"];
    n_x11 -> x6 [label="c5"];
    x5 -> conflict [label="c6"];
    x6 -> conflict [label="c6"];
}
```