Problema 3

```
C0      X := X-1
C1      if(X ≥ Y)
C2          skip
C3          Y := 2X
C4
C5      else
C6          if(W ≥ 8)
C7              W := 3
C8              X := W + X
C9          else
                Y := 5
```

$$ert[C_0 - C_9] = 2 + 2 \cdot [X-1 \geq Y] + [X-1 < Y]$$
$$+ 2 \cdot [W \geq 8][X-1 < Y]$$
$$+ [W < 8][X-1 < Y]$$

$$ert[[c_4 - c_9]](0) = 1 + [w \geq 8] * ert[[w := 3, x := w + x]](0) + [w < 8] * ert[[y := 5]](0)$$

$$= 1 + [w \geq 8] * ert[[w := 3]](ert[[x := w + x]](0)) + [w < 8] * ert[[y := 5]](0)$$

$$= 1 + [w \geq 8] * ert[[w := 3]](1 + 0) + [w < 8] * (1 + 0)$$

$$= 1 + [w \geq 8] * (1 + 1) + [w < 8] * 1$$

$$= 1 + 2 * [w \geq 8] + [w < 8]$$ ☑

$$ert[[c_2 - c_3]](0) = ert[[skip]](ert[[x := 2x]](0))$$

$$= ert[[skip]](1 + 0)$$

$$= 1 + 1$$

$$= 2$$ ☑

$$ert[[c_1 - c_9]](0) = 1 + [x \geq y] * ert[[c_2 - c_3]](0) + [x < y] * ert[[c_4 - c_9]](0)$$

$$= 1 + 2 * [x \geq y] + [x < y] + 2 * [w \geq 8] \cdot [x < y] + [w < 8][x < y]$$

$$ert[C_0 - C_9](0) = ert[x := x-1](ert[C_1 - C_9](0))$$

$$= ert[x := x-1](1 + 2 * [x \geq y] + [x < y] + 2 * [w \geq 8] \cdot [x < y] + [w < 8] \cdot [x < y])$$

$$= 1 + 1 + 2 * [x-1 \geq y] + [x-1 < y] + 2 * [w \geq 8] \cdot [x-1 < y] + [w < 8] \cdot [x-1 < y]$$