

CASO $\sigma y > -2$

$\langle \text{newvar } x := 2 \text{ in while } x > 0 \text{ do } y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip}, \sigma \rangle \rightarrow$
(R2 newvar)

| $\langle \text{while } x > 0 \text{ do } y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip}, [\sigma|x:2] \rangle \rightarrow$ (R2while)
| $\langle y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip};$
| $\text{ while } x > 0 \text{ do } y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip}, [\sigma|x:2] \rangle$

$\langle \text{newvar } x := 2 \text{ in } y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip};$
 $\text{ while } x > 0 \text{ do } y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip}, [[\sigma|x:2] | x:\sigma x] \rangle =$
 $\langle \text{newvar } x := 2 \text{ in } y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip};$
 $\text{ while } x > 0 \text{ do } y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip}, \sigma \rangle \rightarrow$

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| $\text{ while } x > 0 \text{ do } y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip}, [\sigma|x:2] \rangle \rightarrow$ R2 ;
| $\langle \text{if } y > 0 \text{ then } x := x - 1 \text{ else skip};$
| $\text{ while } x > 0 \text{ do } y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip}, [\sigma|x:2, y:\sigma y+2] \rangle \rightarrow$

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 $\text{ while } x > 0 \text{ do } y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip}, [\sigma|y:\sigma y+2] \rangle \rightarrow$

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| $\langle x := x - 1;$
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| $\langle \text{while } x > 0 \text{ do } y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip}, [\sigma|y:\sigma y+2, x:1] \rangle$

$\langle \text{newvar } x := 1 \text{ in } \text{ OJO! } x \text{ pasa a tener valor local } 1$
 $\text{ while } x > 0 \text{ do } y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip}, [\sigma|y:\sigma y+2] \rangle \rightarrow$

... varios pasos en donde se repite lo anterior....

$\langle \text{newvar } x := 0 \text{ in}$
 $\text{ while } x > 0 \text{ do } y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip}, [\sigma|y:\sigma y+2+1] \rangle \rightarrow$

(R1 Newvar)

| $\langle \text{while } x > 0 \text{ do } y := x + y; \text{ if } y > 0 \text{ then } x := x - 1 \text{ else skip}, [\sigma|y:\sigma y+2+1, x:0] \rangle \rightarrow$
| $[\sigma|y:\sigma y+2+1, x:0]$

$[\sigma|y:\sigma y+2+1, x:0] | x:\sigma x] = [\sigma|y:\sigma y+2+1]$