—

HA 2

a)

i)

HA 4

CODE

HA 6

$< \ x \geq 0 \ >$

$< \ x \geq 0 \wedge -x \leq 0 \wedge -x = -x \wedge x = x \ >$

$res = -x;$

$< \ x \geq 0 \wedge res \leq 0 \wedge res = -x \wedge x = x \ >$

$c = x;$

$< \ x \geq 0 \wedge res \leq 0 \wedge res = -x \wedge c = x \ >$

$< \ res = -x + \sum\limits_{k=x}^{c+1} 2k \wedge c \geq 0 \ >$

$while(c > 0)$

$\quad < \ res = -x + \sum\limits_{k=x}^{c+1} 2k \wedge c \geq 0 \wedge c > 0 \ >$

$\quad < \ res + 2*c = -x + \sum\limits_{k=x}^{c-1+1} 2k \wedge c - 1 \geq 0 \ >$

$\quad res = res + 2*c;$

$\quad < \ res = -x + \sum\limits_{k=x}^{c-1+1} 2k \wedge c - 1 \geq 0 \ >$

$\quad c = c - 1;$

$\quad < \ res = -x + \sum\limits_{k=x}^{c+1} 2k \wedge c \geq 0 \ >$

$\}$

$< \ res = -x + \sum\limits_{k=x}^{c+1} 2k \wedge c \geq 0 \wedge \neg(c > 0) \ >$

$< \ res = -x + \sum\limits_{k=x}^{1} 2k \ >$