

$$(multc \ x \ y) = \text{ITE} \langle \text{I2 } x, y \rangle$$

$$\text{ITE} \langle (\text{GTZ } x), (\text{P } x), (s, x) \rangle$$

$$multc = \lambda b [\lambda x, y [\text{ITE} \langle \text{I2 } x, y \rangle, y, \text{ITE} \langle (\text{GTZ } x), (\text{P } x), (s, x) \rangle],$$

$$(\text{P } x) (\text{addc } y \ y)],$$

$$(\text{S } x) (\text{addc } y, y)]$$



$$(multc \ x \ y) = (\lambda b [\lambda x, y, z [\text{ITE} \langle \text{I2 } x, z \rangle, z,$$

$$\text{ITE} \langle (\text{GTZ } x), (\text{P } x), y, (\text{addc } z, y),$$

$$(\text{S } x), y, (\text{addc } z, -y) \rangle \rangle \rangle]$$

$$x \ , \ y \ , \ 0)$$

$$x, y, z : \text{int}$$

2) multc (p (p 2)) (s (s 2))

$$(p (p 2)) = p^2 2 \text{ : int}$$

and $m [p^2 2] v = -2$

$$(s (s 2)) = s^2 2 \text{ : int and}$$

$$m [s^2 2] v = 2$$

multc -2 2 = $\boxed{-4}$

$$\Rightarrow \lambda \text{ y z (ITE <I2 x>, Z, ITE <GT2 u>, b (p x), y, (add c 2y),$$

$$b (sx), y, (add 2, -y)))]$$

$$-2 \quad 2 \quad 0)$$

② $x = -2 \neq 0$ ②

~~$x = -2$~~ $-2 < 0$

\therefore we go to

$$\lambda b [-1, 2, -2]$$

~~use~~ $x = -1 \neq 0$

$$-2 < 0 \Rightarrow \lambda b [0, 2, -4]$$

$$x = 0 \Rightarrow -4$$