**Axioms**

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| **//not  1) false = not(true);  2) true = not(false);** |
| **//and  3) x and true = x;  4) false = x and false;** |
| **//implies  5) x implies (y and $z) = (y and $z) or not(x);  6) false implies x = true;  7) x = true implies (x and true);** |
| **Variables x : bool; y : bool; z : bool;** |
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| **//+  8) x + 0 = x;  9) x + s(y) = s(x + y);** |
| **//-  10) x - 0 = x;  11 s(x) - s(y) = x - y;** |
| **//ge: > or =  12 x ge 0 = true;  13 0 ge s(x) = false;  14 s(x) ge s(y) = x ge y;** |
| **//times  15 x times 0 = 0;  16 x times s(y) = x + (x times y);** |
| **//divide  //Please excuse the heresy of defining x/0 = 0  17 if ge(x, y) = true then x ÷ y = s((x - y) ÷ y);  18 if ge(x, y) = false then x ÷ y = 0;** |
| **Variables x : nat; y : nat;** |