	Proved?		Time (s)		Steps		Gens	
Term	BM	BME	BM	BME	BM	BME	BM	BME
m + 0 = m	yes	yes	0,018997	0,050993	6	7	0	0
m + SUC n = SUC (m + n)	yes	yes	0,019997	0,047993	6	6	0	0
m + n = n + m	yes	yes	0,018997	0,047993	6	6	0	0
m + n + p = (m + n) + p	yes	yes	0,058991	0,06399	9	7	0	0
(m + n) + p = m + n + p	loop	loop	>10	>10	-	-	-	-
m + n = 0 <=> m = 0 /\ n = 0	yes	yes	0,12898	0,200969	28	21	0	0
m + n = m + p <=> n = p	yes	yes	0,082987	0,085987	16	11	0	0
m + p = n + p <=> m = n	no	no	0,141979	0,177973	30	20	1	1
m + n = m <=> n = 0	no	yes	0,032995	0,098985	11	12	0	0
m + n = n <=> m = 0	no	no	0,094985	0,155976	24	18	1	1
SUC m = m + SUC 0	yes	yes	0,008999	0,011998	2	1	0	0
m * 0 = 0	yes	yes	0,027996	0,045993	8	6	0	0
m * SUC n = m + m * n	loop	loop	>10	>10	-	-	-	-
0 * n = 0 /\ m * 0 = 0	loop	loop	>10	>10	-	-	-	-
m * n = n * m	yes	loop	0,13298	>10	20	-	0	-
m * (n + p) = m * n + m * p	loop	loop	>10	>10	-	-	-	-
(m + n) * p = m * p + n * p	loop	loop	>10	>10	-	-	-	-
m * n * p = (m * n) * p	no	loop	0,445932	>10	53	-	1	-
m * n = 0 <=> m = 0 \/ n = 0	yes	yes	0,254962	0,181972	48	18	0	0
m * n = m * p <=> m = 0 \/ n = p	no	no	0,357945	0,277958	53	26	2	1
m * p = n * p <=> m = n \/ p = 0	loop	loop	>10	>10	-	-	-	-
SUC (SUC 0) * n = n + n	yes	yes	0,083987	0,013998	11	1	0	0
m * n = SUC 0 <=> m = SUC 0 /\ n = SUC 0	yes	loop	0,6629	>10	97	-	0	-
m EXP n = 0 <=> m = 0 /\ ~(n = 0)	yes	loop	0,113983	>10	29	-	0	-
m EXP (n + p) = m EXP n * m EXP p	no	loop	0,479927	>10	64	-	2	-
SUC 0 EXP n = SUC 0	yes	loop	0,033995	>10	9	-	0	-
n EXP SUC 0 = n	yes	loop	0,06499	>10	12	-	0	-
n EXP SUC (SUC 0) = n * n	yes	loop	0,010998	>10	2	-	0	-
(m * n) EXP p = m EXP p * n EXP p	no	loop	0,410937	>10	54	-	3	-
m EXP (n * p) = m EXP n EXP p	no	loop	1,135827	>10	97	-	5	-
SUC m <= n <=> m < n	yes	loop	0,089986	>10	23	-	0	-
m < SUC n <=> m <= n	yes	loop	0,267959	>10	56	-	0	-
SUC m <= SUC n <=> m <= n	yes	loop	0,022997	>10	6	-	0	-
SUC m < SUC n <=> m < n	yes	loop	0,023996	>10	6	-	0	-
0 <= n	yes	yes	0,016998	0,042994	6	6	0	0
0 < SUC n	yes	yes	0,006999	0,086986	2	10	0	0
n <= n	yes	loop	0,015998	>10	6	-	0	-
~(n < n)	yes	loop	0,016998	>10	6	-	0	-
m <= n /\ n <= m <=> m = n	yes	loop	0,241963	>10	47	-	0	-
~(m < n /\ n < m)	yes	loop	0,567913	>10	96	-	0	-
~(m <= n /\ n < m)	loop	loop	>10	>10	-	-	-	-
~(m < n /\ n <= m)	yes	loop	0,443932	>10	72	-	0	-
m <= n /\ n <= p ==> m <= p	yes	loop	0,095986	>10	21	-	0	-
m < n /\ n < p ==> m < p	yes	yes	0,294955	0,158976	37	13	0	0
m <= n /\ n < p ==> m < p	yes	loop	0,086987	>10	10	-	0	-
m < n /\ n <= p ==> m < p	yes	loop	0,32695	>10	29	-	0	-
m <= n \/ n <= m	yes	loop	0,365945	>10	41	-	0	-
m < n \/ n < m \/ m = n	yes	loop	1,962702	>10	140	-	0	-
m <= n \/ n < m	loop	loop	>10	>10	-	-	-	-
m < n \/ n <= m	yes	loop	1,604756	>10	128	-	0	-
0 < n <=> ~(n = 0)	yes	yes	0,062991	0,096985	12	12	0	0
m <= n <=> m < n \/ m = n	yes	loop	0,242963	>10	32	-	0	-
m < n <=> m <= n /\ ~(m = n)	yes	loop	0,047992	>10	12	-	0	-
~(m <= n) <=> n < m	loop	loop	>10	>10	-	-	-	-
~(m < n) <=> n <= m	loop	loop	>10	>10	-	-	-	-
m < n ==> m <= n	loop	loop	>10	>10	-	-	-	-
m = n ==> m <= n	yes	loop	0,009999	>10	4	-	0	-
m <= m + n	loop	loop	>10	>10	-	-	-	-
n <= m + n	loop	loop	>10	>10	-	-	-	-
m < m + n <=> 0 < n	loop	loop	>10	>10	-	-	-	-
n < m + n <=> 0 < m	loop	loop	>10	>10	-	-	-	-
m + n <= m + p <=> n <= p	loop	loop	>10	>10	-	-	-	-
m + p <= n + p <=> m <= n	loop	loop	>10	>10	-	-	-	-
m + n < m + p <=> n < p	loop	loop	>10	>10	-	-	-	-
m + p < n + p <=> m < n	loop	loop	>10	>10	-	-	-	-

m <= p /\ n <= q ==> m + n <= p + q	loop	loop	>10	>10	-	-	-	-
m <= p /\ n < q ==> m + n < p + q	loop	loop	>10	>10	-	-	-	-
m < p /\ n <= q ==> m + n < p + q	loop	loop	>10	>10	-	-	-	-
m < p /\ n < q ==> m + n < p + q	loop	loop	>10	>10	-	-	-	-
0 < m * n <=> 0 < m /\ 0 < n	loop	yes	>10	0,075989	-	7	-	0
m <= n /\ p <= q ==> m * p <= n * q	loop	loop	>10	>10	-	-	-	-
~(m = 0) /\ n < p ==> m * n < m * p	loop	loop	>10	>10	-	-	-	-
m * n <= m * p <=> m = 0 \/ n <= p	loop	loop	>10	>10	-	-	-	-
m * p <= n * p <=> m <= n \/ p = 0	loop	loop	>10	>10	-	-	-	-
m * n < m * p <=> ~(m = 0) /\ n < p	loop	loop	>10	>10	-	-	-	-
m * p < n * p <=> m < n /\ ~(p = 0)	loop	loop	>10	>10	-	-	-	-
SUC m = SUC n <=> m = n	yes	yes	0,012998	0,028996	5	5	0	0
m < n /\ p < q ==> m * p < n * q	loop	loop	>10	>10	-	-	-	-
n <= n * n	loop	loop	>10	>10	-	-	-	-
(P m n <=> P n m) /\ (m <= n ==> P m n) ==> P m n	no	no	0,038994	0,103985	15	14	3	0
P m m /\ (P m n <=> P n m) /\ (m < n ==> P m n) ==> P m y	no	no	0,057992	0,169974	20	11	8	0
((m < n ==> P m) ==> P n) ==> P n	loop	loop	>10	>10	-	-	-	-
~EVEN n <=> ODD n	loop	no	>10	0,343948	-	30	-	0
~ODD n <=> EVEN n	loop	no	>10	0,241963	-	21	-	0
EVEN n \/ ODD n	loop	no	>10	0,219967	-	19	-	0
~(EVEN n /\ ODD n)	loop	no	>10	0,224965	-	20	-	0
EVEN (m + n) <=> EVEN m <=> EVEN n	loop	loop	>10	>10	-	-	-	-
EVEN (m * n) <=> EVEN m \/ EVEN n	no	loop	0,369944	>10	45	-	1	-
EVEN (m EXP n) <=> EVEN m /\ ~(n = 0)	loop	loop	>10	>10	-	-	-	-
ODD (m + n) <=> ~(ODD m <=> ODD n)	loop	loop	>10	>10	-	-	-	-
ODD (m * n) <=> ODD m /\ ODD n	loop	loop	>10	>10	-	-	-	-
ODD (m EXP n) <=> ODD m \/ n = 0	loop	loop	>10	>10	-	-	-	-
EVEN (SUC (SUC 0) * n)	yes	loop	0,041993	>10	10	-	0	-
ODD (SUC (SUC (SUC 0) * n))	yes	loop	0,039994	>10	10	-	0	-
0 - m = 0 /\ m - 0 = m	yes	yes	0,040994	0,083987	10	10	0	0
PRE (SUC m - n) = m - n	yes	loop	0,041994	>10	8	-	0	-
SUC m - SUC n = m - n	yes	loop	0,008999	>10	2	-	0	-
n - n = 0	yes	loop	0,020997	>10	6	-	0	-
(m + n) - n = m	no	loop	0,105984	>10	23	-	2	-
(m + n) - m = n	yes	loop	0,038994	>10	8	-	0	-
m - n = 0 <=> m <= n	loop	loop	>10	>10	-	-	-	-
m - (m + n) = 0	yes	loop	0,037994	>10	7	-	0	-
n - (m + n) = 0	yes	loop	0,022997	>10	5	-	0	-
n <= m ==> m - n + n = m	loop	loop	>10	>10	-	-	-	-
(m + n) - (m + p) = n - p	yes	loop	0,067989	>10	9	-	0	-
(m + p) - (n + p) = m - n	yes	loop	0,115983	>10	16	-	0	-
m * (n - p) = m * n - m * p	loop	loop	>10	>10	-	-	-	-
(m - n) * p = m * p - n * p	no	loop	0,365945	>10	47	-	2	-
SUC n - SUC 0 = n	no	loop	0,001999	>10	2	-	0	-
EVEN (m - n) <=> m <= n \/ (EVEN m <=> EVEN n)	loop	no	>10	0,470929	-	38	-	1
ODD (m - n) <=> n < m /\ ~(ODD m <=> ODD n)	loop	loop	>10	>10	-	-	-	-
0 < FACT n	loop	loop	>10	>10	-	-	-	-
1 <= FACT n	loop	loop	>10	>10	-	-	-	-
m <= n ==> FACT m <= FACT n	loop	loop	>10	>10	-	-	-	-
0 < x EXP n <=> ~(x = 0) \/ n = 0	loop	loop	>10	>10	-	-	-	-
x EXP m < x EXP n <=> SUC (SUC 0) <= x /\ m < n \/ x = 0 /\ ~(m = 0) /\ n = 0	loop	loop	>10	>10	-	-	-	-
x EXP m <= x EXP n <=> (if x = 0 then m = 0 ==> n = 0 else x = 1 \/ m <= n)	loop	loop	>10	>10	-	-	-	-
P (PRE n) <=> n = SUC m \/ m = 0 /\ n = 0 ==> P m	no	loop	0,043994	>10	13	-	0	-
ZIP [] [] = [] /\ ZIP (CONS h1 t1) (CONS h2 t2) = CONS (h1,h2) (ZIP t1 t2)	yes	yes	0,011998	0,028995	3	3	0	0
~(CONS h t = [])	yes	yes	0,003	0,011998	1	1	0	0
LAST [h] = h /\ LAST (CONS h (CONS k t)) = LAST (CONS k t)	yes	yes	0,080988	0,030995	19	3	0	0
APPEND l [] = l	yes	yes	0,025996	0,055991	8	7	0	0
APPEND l (APPEND m n) = APPEND (APPEND l m) n	yes	yes	0,038994	0,055991	8	6	0	0
REVERSE (APPEND l m) = APPEND (REVERSE m) (REVERSE l)	yes	yes	0,051992	0,06299	8	7	0	0
REVERSE (REVERSE l) = l	yes	yes	0,055991	0,058991	11	7	0	0
CONS h1 t1 = CONS h2 t2 <=> h1 = h2 /\ t1 = t2	yes	yes	0,055992	0,073988	20	9	0	0
LENGTH (APPEND l m) = LENGTH l + LENGTH m	yes	loop	0,034995	>10	6	-	0	-
MAP f (APPEND l1 l2) = APPEND (MAP f l1) (MAP f l2)	yes	yes	0,053992	0,059991	9	6	1	0

LENGTH (MAP f l) = LENGTH l	yes	loop	0,025996	>10	6	-	0	-
LENGTH l = 0 <=> l = []	yes	loop	0,043994	>10	12	-	0	-
LENGTH l = SUC n /\ l = CONS h t ==> LENGTH t = n	yes	loop	0,013998	>10	4	-	0	-
ALL (\x. f x = g x) l ==> MAP f l = MAP g l	no	yes	0,077988	0,12698	17	9	0	0
(MEM x l /\ P x ==> Q x) /\ ALL P l ==> ALL Q l	no	no	0,016998	0,261961	7	18	0	0
~EX P l <=> ALL (\x. ~P x) l	no	yes	0,062991	0,210968	18	17	0	0
~ALL P l <=> EX (\x. ~P x) l	no	loop	0,062991	>10	19	-	1	-
ALL P (MAP f l) <=> ALL (P o f) l	no	no	0,085987	0,19897	18	16	0	0
ALL (\x. T) l	loop	yes	>10	0,046993	-	9	-	0
ALL2 (\x y. f x = f y) l m ==> MAP f l = MAP f m	no	no	0,186971	0,648901	36	49	2	2
ALL2 P (MAP f l) l <=> ALL (\a. P (f a) a) l	no	yes	0,078988	0,227966	18	17	0	0
ALL (\x. f x = x) l ==> MAP f l = l	no	yes	0,074989	0,13098	18	11	0	0
ALL2 (\x y. P x /\ Q x y) l m <=> ALL P l /\ ALL2 Q l m	no	loop	0,311952	>10	54	-	2	-
ITLIST f (APPEND l1 l2) a = ITLIST f l1 (ITLIST f l2 a)	yes	yes	0,052992	0,06799	11	7	3	0
ITLIST f (APPEND l [a]) b = ITLIST f l (f a b)	no	yes	0,029996	0,014998	7	1	0	0
ALL (\x. P x ==> Q x) l /\ ALL P l ==> ALL Q l	no	yes	0,106984	0,199969	21	11	0	0
ALL P l /\ ALL Q l <=> ALL (\x. P x /\ Q x) l	no	no	0,07099	0,344947	19	20	0	0
(MEM x l /\ P x ==> Q x) /\ EX P l ==> EX Q l	no	loop	0,016997	>10	7	-	0	-
MEM x l ==> P x <=> ALL P l	no	no	0,086987	0,310952	23	27	0	0
LENGTH (REPLICATE n x) = n	yes	loop	0,025996	>10	6	-	0	-
EX P (MAP f l) <=> EX (P o f) l	no	loop	0,06999	>10	16	-	1	-
ALL (P x) l <=> ALL (\s. P x s) l	no	yes	0,067989	0,215967	19	17	1	0
MEM x (APPEND l1 l2) <=> MEM x l1 \/ MEM x l2	yes	yes	0,168974	0,316952	36	27	0	0
FILTER P (APPEND l1 l2) = APPEND (FILTER P l1) (FILTER P l2)	no	no	0,093986	0,145978	16	13	1	1
FILTER P (MAP f l) = MAP f (FILTER (P o f) l)	no	no	0,115983	0,207969	24	14	6	2
MEM x (FILTER P l) <=> P x /\ MEM x l	no	loop	0,016997	>10	7	-	0	-
LENGTH l1 = LENGTH l2 ==> MAP FST (ZIP l1 l2) = l1	no	loop	0,401938	>10	54	-	4	-
LENGTH l1 = LENGTH l2 ==> MAP SND (ZIP l1 l2) = l2	no	loop	0,403939	>10	51	-	4	-
MEM (x,ASSOC x l) l <=> MEM x (MAP FST l)	no	no	2,990546	1,569762	262	76	43	11
ALL P (APPEND l1 l2) <=> ALL P l1 /\ ALL P l2	yes	yes	0,167975	0,325951	35	27	0	0
n < LENGTH l ==> MEM (EL n l) l	loop	loop	>10	>10	-	-	-	-
ALL2 P (MAP f l) (MAP g m) <=> ALL2 (\x y. P (f x) (g y)) l m	no	loop	0,357946	>10	57	-	5	-
ALL2 P l m /\ ALL2 Q l m <=> ALL2 (\x y. P x y /\ Q x y) l m	no	loop	0,238964	>10	46	-	2	-
ALL2 P l l <=> ALL (\x. P x x) l	no	yes	0,06999	0,218966	18	17	0	0
APPEND l m = [] <=> l = [] /\ m = []	yes	yes	0,082988	0,212967	22	21	0	0
LENGTH l = LENGTH m ==> LENGTH (MAP2 f l m) = LENGTH m	loop	loop	>10	>10	-	-	-	-
(P x ==> Q x) ==> ALL P l ==> ALL Q l	no	no	0,008999	0,240963	6	17	0	0
(P x y ==> Q x y) ==> ALL2 P l l' ==> ALL2 Q l l'	no	loop	0,008999	>10	6	-	0	-