Results

December 12, 2011

Properties

	plain	simple ind	approx	fixpoint ind	struct ind
$prop_{add_{comm}}$ `+ x y = + y x`					✓ fin
$prop_{assoc_{mul}}$ `* x (* y z) = * (* x y) z`					
$prop_{assoc_{plus}}$ `+ x (+ y z) = + (+ x y) z`		✓ ∞	✓ ∞	✓ ∞	✓ ∞
$prop_{idem_{mul}}$ `* x x != x`			✓ ∞		
$prop_{idem_{plus}}$ `+ x x != x`			✓ ∞		
$prop_{le_{plus}}$ `<= n (+ n m) = True`		✓ fin			✓ fin
$prop_{le_{plus_{sym}}}$ `<= n (+ m n) = True`					
$prop_{le_{succ_{plus}}}$ `< i (S (+ i m)) = True`		✓ fin			✓ fin
$prop_{left_{distrib}}$ `* x (+ y z) = + (* x y) (* x z)`					
$prop_{left_{identity_{mul}}}$ `* (S (Z)) x = x`		✓ ∞			✓ ∞
$prop_{left_{identity_{plus}}}$ `+ (Z) x = x`		✓ ∞	✓ ∞		✓ ∞
$prop_{lt_{suc}}$ `< i (S (+ m i)) = True`					
$prop_{lt_{zero_{eqzero}}}$ `<= n (Z) = == n (Z)`		✓ fin			✓ fin
$prop_{max_{absorb}}$ `max x (min x y) = x`					✓ fin
$prop_{max_{assoc}}$ `max (max a b) c = max a (max b c)`					✓ ∞
$prop_{max_{le}}$ `== (max a b) a = <= b a`					✓ fin
$prop_{max_{le_{sym}}}$ `== (max a b) b = <= a b`					✓ fin
$prop_{max_{sym}}$ `max a b = max b a`					✓ ∞

$prop_{min_{absorb}}$ `min x (max x y) = x`					$\checkmark_{\text{fin}}$
$prop_{min_{assoc}}$ `min (min a b) c = min a (min b c)`					$\checkmark_{\infty}$
$prop_{min_{le}}$ `== (min a b) a = <= a b`					$\checkmark_{\text{fin}}$
$prop_{min_{le_{sym}}}$ `== (min a b) b = <= b a`		$\checkmark_{\text{fin}}$			$\checkmark_{\text{fin}}$
$prop_{min_{sym}}$ `min a b = min b a`					$\checkmark_{\text{fin}}$
$prop_{minus_{absorbish}}$ `- (+ n m) n = m`		$\checkmark_{\text{fin}}$			$\checkmark_{\text{fin}}$
$prop_{minus_{assocish}}$ `- (- i j) k = - i (+ j k)`		$\checkmark_{\infty}$			$\checkmark_{\infty}$
$prop_{minus_{distribish}}$ `- (+ k m) (+ k n) = - m n`		$\checkmark_{\text{fin}}$			$\checkmark_{\text{fin}}$
$prop_{minus_{plus}}$ `- (+ m n) n = m`					
$prop_{minus_{zero}}$ `- m m = Z`		$\checkmark_{\text{fin}}$			$\checkmark_{\text{fin}}$
$prop_{minus_{zeroish}}$ `- n (+ n m) = Z`		$\checkmark_{\text{fin}}$			$\checkmark_{\text{fin}}$
$prop_{mul_{comm}}$ `* x y = * y x`					
$prop_{refl}$ `== x x = True`		$\checkmark_{\text{fin}}$			$\checkmark_{\text{fin}}$
$prop_{right_{distrib}}$ `* (+ x y) z = + (* x z) (* y z)`					
$prop_{right_{identity_{mul}}}$ `* x (S (Z)) = x`		$\checkmark_{\infty}$			$\checkmark_{\infty}$
$prop_{right_{identity_{plus}}}$ `+ x (Z) = x`		$\checkmark_{\infty}$	$\checkmark_{\infty}$		$\checkmark_{\infty}$
$prop_{succ_{minus_3}}$ `- (- (S m) n) (S k) = - (- m n) k`		$\checkmark_{\text{fin}}$			$\checkmark_{\text{fin}}$
$prop_{zero_{is_{one}}}$ `Z != S (Z)`	$\checkmark_{\infty}$		$\checkmark_{\infty}$		

Summary

	total	plain	simple ind	approx	fixpoint ind	struct ind
$\checkmark_{\infty}$	12/36	1/12	6/12	6/12	1/12	9/12
$\checkmark_{\text{fin}}$	17/36		10/17			17/17