

## **general**<sup>11,40</sup>

STM: integer sqrt

STM: band-to-and

STM: bor-to-and

STM: bnot-tt

STM: bnot-ff

ABS: bool-decider( $b$ ) **bool-decider**

STM: bool-decider\_wf

ABS: projn( $n;x$ ) **projn**

ABS: invert-union( $x$ ) **invert-union**

STM: invert-union\_wf

STM: not-false

STM: not-true

STM: not-assert

STM: not-not-assert

STM: equal-bnot

STM: inconsistent-bool-eq

STM: inconsistent-bool-eq2

STM: inconsistent-bool-eq3

STM: inconsistent-bool-eq4

ABS:  $[d]_b$  **dcdt-to-bool**

STM: dcdt-to-bool\_wf

STM: dcdt-to-bool-equivalence

STM: test-rewrite-dcdt

STM: bool-to-dcdt-aux

STM: bool-to-neg-dcdt-aux

ABS:  $\{f\}_q$  **bool-to-neg-dcdr**  
 STM: bool-to-neg-dcdr\_wf  
 ABS:  $\{f\}_b$  **bool-to-dcdr**  
 STM: bool-to-dcdr\_wf  
 ABS: if  $p:P$  then  $A(p)$  else  $B$  fi **branch**  
 STM: branch\_wf  
 STM: branch\_wf2  
 STM: branch-iffthenelse  
 STM: decidable-filter  
 ABS:  $\text{can-apply}(f;x)$  **can-apply**  
 STM: can-apply\_wf  
 ABS:  $\text{do-apply}(f;x)$  **do-apply**  
 STM: do-apply\_wf  
 STM: inl-do-apply  
 ABS:  $f \circ g$  **p-compose**  
 STM: p-compose\_wf  
 ABS:  $f \circ' g$  **p-compose'**  
 STM: p-compose'\_wf  
 ABS:  $\text{p-lift}(d;f)$  **p-lift**  
 STM: p-lift\_wf  
 STM: can-apply-p-lift  
 STM: do-apply-p-lift  
 STM: can-apply-compose-sq  
 STM: can-apply-compose  
 STM: can-apply-compose-iff  
 STM: do-apply-compose  
 STM: can-apply-compose'

STM: do-apply-compose'  
 ABS: p-id() **p-id**  
 STM: p-id\_wf  
 STM: p-compose-id  
 STM: p-id-compose  
 STM: p-compose-associative  
 ABS: p-first( $L$ ) **p-first**  
 STM: p-first\_wf  
 STM: p-first-singleton  
 ABS: p\_first\_nil{p\_first\_nil\_compseq\_tag\_def:ObjectId}( $x$ ) **p\_first\_nil\_compseq\_tag\_def**  
 ABS: [ $f?g$ ] **p-conditional**  
 STM: p-conditional\_wf  
 STM: p-conditional-domain  
 STM: p-conditional-to-p-first  
 ABS: p-filter( $f$ ) **p-filter**  
 STM: p-filter\_wf  
 ABS: p-co-filter( $f$ ) **p-co-filter**  
 STM: p-co-filter\_wf  
 STM: can-apply-p-filter  
 STM: can-apply-p-co-filter  
 STM: do-apply-p-filter  
 STM: do-apply-p-co-filter  
 ABS: p-restrict( $f;p$ ) **p-restrict**  
 STM: p-restrict\_wf  
 ABS: p-co-restrict( $f;p$ ) **p-co-restrict**  
 STM: p-co-restrict\_wf  
 STM: can-apply-p-restrict

STM: can-apply-p-co-restrict  
 STM: do-apply-p-restrict  
 STM: do-apply-p-co-restrict  
 ABS:  $f \hat{=} n$  **p-fun-exp**  
 STM: p-fun-exp\_wf  
 STM: p-fun-exp-one  
 STM: p-fun-exp-compose  
 STM: p-fun-exp-add  
 STM: can-apply-fun-exp-add  
 STM: can-apply-fun-exp-add-iff  
 STM: simple-primrec-add  
 STM: p-fun-exp-add1-sq  
 STM: can-apply-fun-exp  
 STM: p-fun-exp-add-sq  
 ABS:  $p\text{-mu}(P;x)$  **p-mu**  
 STM: p-mu\_wf  
 STM: p-mu-exists  
 STM: p-mu-decider  
 ABS:  $\text{mu}'(P)$  **mu'**  
 STM: mu'\_wf  
 STM: can-apply-mu'  
 STM: do-apply-mu'  
 STM: member-assert  
 STM: length\_wf\_nat  
 STM: hd\_member  
 ABS:  $\text{fseg}(T;L_1;L_2)$  **fseg**  
 STM: fseg\_wf

STM: nth\_tl.is\_fseg  
 STM: member\_nth\_tl  
 STM: nth\_tl.append  
 STM: fseg.append  
 STM: fseg.extend  
 STM: fseg.transitivity  
 STM: fseg.weakening  
 STM: nil\_fseg  
 STM: fseg\_nil  
 STM: fseg.length  
 STM: filter\_fseg  
 STM: fseg.member  
 STM: fseg.select  
 ABS:  $\text{lastn}(n;L)$  **lastn**  
 STM: lastn\_wf  
 STM: length-lastn  
 ABS:  $\text{adjacent}(T;L;x;y)$  **adjacent**  
 STM: adjacent\_wf  
 STM: adjacent-nil  
 STM: adjacent-singleton  
 STM: adjacent-cons  
 STM: simplify-equal-imp  
 STM: equal-top  
 ABS:  $\text{p-inject}(A;B;f)$  **p-inject**  
 STM: p-inject\_wf  
 STM: p-compose-inject  
 STM: p-fun-exp-injection

STM: subtype-top  
STM: subtype\_rel\_equal  
STM: subtype\_rel\_self  
STM: fun\_exp\_add\_sq  
STM: decidable\_implies\_better  
STM: subtype\_rel\_function  
STM: subtype\_rel\_dep\_function  
STM: subtype\_rel\_dep\_function\_iff  
STM: subtype\_rel\_product  
STM: subtype\_rel\_dep\_product\_iff  
STM: subtype\_rel\_sum  
STM: subtype\_rel\_set  
STM: subtype\_rel\_list  
STM: subtype\_rel\_transitivity  
ABS:  $A \supseteq_r B$  **rev\_subtype\_rel**  
STM: rev\_subtype\_rel\_wf  
ABS:  $A \equiv B$  **ext-eq**  
STM: ext-eq\_wf  
STM: ext-eq\_weakening  
STM: ext-eq\_inversion  
STM: ext-eq\_transitivity  
STM: subtype\_rel\_functionality\_wrt\_iff  
STM: subtype\_rel\_functionality\_wrt\_implies  
STM: subtype\_rel\_weakening  
STM: rev\_subtype\_rel\_weakening  
STM: list\_subtype  
STM: nil\_member\_variant

STM: member-exists  
STM: member-exists2  
STM: sub-equality  
STM: L\_all\_wf2  
STM: null-ite  
STM: typed-null-ite  
STM: decidable\_\_equal\_union  
STM: decidable\_\_equal\_unit  
STM: length-append  
STM: filter-commutes  
STM: null\_wf3  
STM: member-zip  
STM: adjacent-append  
STM: adjacent-before  
STM: adjacent-member  
STM: adjacent-sublist  
STM: hd-before  
STM: before-hd  
STM: last-not-before  
STM: before-adjacent  
STM: before-adjacent2  
STM: adjacent-to-same  
STM: adjacent-to-same-sublist  
STM: adjacent-to-same-sublist2  
STM: adjacent-to-last  
STM: no\_repeats-sublist  
STM: sublist-same-last

STM: decidable\_\_equal\_product  
STM: decidable\_\_equal\_nat\_plus  
STM: decidable\_\_equal\_nat  
STM: member-decide-assert  
STM: filter\_wf2  
STM: no\_repeats\_filter2  
STM: filter\_tt  
STM: filter\_type2  
STM: filter\_wf3  
STM: general-append-cancellation  
STM: append-cancellation  
STM: append-impossible  
STM: append-impossible2  
STM: append-cancellation-right  
STM: append\_iseg  
STM: iseg\_append\_iff  
STM: iseg\_append\_single  
STM: iseg\_append\_length  
STM: list\_accum\_append  
STM: last\_induction  
STM: last-cons  
STM: last\_append  
STM: list\_accum\_functionality  
STM: list\_accum\_filter  
STM: p-first-append  
STM: p-first-cons  
STM: can-apply-p-first



STM: do-apply-p-first  
 ABS:  $p\text{-disjoint}(A;f;g)$  **p-disjoint**  
 STM: p-disjoint\_wf  
 STM: compat-iff-common-iseq  
 ABS:  $A \subseteq B$  **l-contains**  
 STM: l-contains\_wf  
 STM: l-contains\_weakening  
 STM: l-contains\_nil  
 STM: nil-contains  
 STM: l-contains\_cons  
 STM: l-contains\_append  
 STM: l-contains\_append2  
 STM: l-contains\_append3  
 STM: l-contains\_append4  
 STM: l-contains\_disjoint  
 STM: l-disjoint\_append  
 STM: l-disjoint\_append2  
 STM: l-disjoint\_symmetry  
 STM: l-disjoint\_singleton  
 STM: l-disjoint\_singleton2  
 STM: l-disjoint\_nil  
 STM: l-disjoint\_nil2  
 ABS:  $\forall x \in L. P(x)$  **l-all**  
 STM: l-all\_wf  
 ABS:  $f[x:=v]$  **update**  
 STM: update\_wf  
 ABS:  $l[i:=x]$  **list\_update**

STM: list\_update\_wf  
STM: list\_update\_select  
STM: list\_update\_length  
STM: iseg\_antisymmetry  
STM: compat\_cons  
STM: compat\_append  
STM: compat\_append2  
STM: compat\_symmetry  
STM: compat\_iseg  
STM: compat\_iseg2  
ABS: sorted-by( $R;L$ ) **sorted-by**  
STM: sorted-by\_wf  
ABS: sorted( $L$ ) **sorted**  
STM: sorted\_wf  
STM: sorted\_cons  
STM: sorted-by\_cons  
STM: sorted\_filter  
ABS: insert-by( $eq;r;x;l$ ) **insert-by**  
STM: insert-by\_wf  
ABS: s-insert( $x;l$ ) **s-insert**  
STM: s-insert\_wf  
STM: member-s-insert  
STM: member-insert-by  
STM: s-insert\_sorted  
STM: insert-by\_sorted-by  
STM: s-insert\_no\_repeats  
STM: insert-by\_no\_repeats

STM: sorted-by-exists  
STM: sorted-by-exists2  
ABS: s-filter( $p;as$ ) **s-filter**  
STM: s-filter\_wf  
ABS: merge( $as;bs$ ) **merge**  
STM: merge\_wf  
STM: member-merge  
STM: sorted-merge  
STM: no\_repeats-merge  
STM: strict-sorted  
ABS: priority-select( $f;g;as$ ) **priority-select**  
STM: priority-select\_wf  
STM: priority-select-property  
STM: priority-select-inr  
STM: not-isl-priority-select  
STM: priority-select-tt  
STM: priority-select-ff  
STM: fun\_exp\_add\_sq  
STM: all-but-one  
STM: no\_repeats\_member  
ABS: imax-list( $L$ ) **imax-list**  
STM: imax-list\_wf  
STM: imax-list-ub  
STM: imax-list-lb  
STM: imax-list-subset  
STM: subset-map  
STM: maximal-in-list

STM: member-le-max  
 STM: l\_member\_subtype  
 STM: l\_member\_subtype2  
 STM: l\_all\_nil  
 STM: l\_all\_liff  
 STM: l\_all\_subtype  
 ABS: l\_interval( $l;j;i$ ) **l\_interval**  
 STM: l\_interval\_wf  
 STM: length\_l\_interval  
 STM: select\_l\_interval  
 STM: hd\_l\_interval  
 STM: last\_l\_interval  
 ABS: ( $\forall x,y \in L. P(x;y)$ ) **pairwise**  
 STM: pairwise\_wf  
 STM: pairwise\_nil  
 STM: pairwise\_singleton  
 STM: pairwise\_cons  
 STM: do\_apply\_p\_first\_disjoint  
 ABS: inv-rel( $A;B;f;finv$ ) **inv-rel**  
 STM: inv-rel\_wf  
 STM: inv-rel\_inject  
 STM: hd\_filter  
 STM: find\_hd\_filter  
 STM: list\_set\_type  
 STM: list\_set\_type\_property  
 STM: list\_set\_type\_member  
 STM: list\_set\_type2

STM: list-set-type3  
STM: list-equal-set  
STM: l\_member\_set  
STM: l\_member\_set2  
STM: l\_member-set  
STM: member\_map2  
STM: no-repeats-pairwise  
STM: member-mapfilter  
STM: mapfilter-append  
STM: map-wf2  
STM: wellfounded-anti-reflexive  
STM: no-member-sq-nil  
STM: l\_before\_append\_iff  
STM: append\_assoc\_sq  
STM: append-nil  
STM: nil-iff-no-member  
STM: tl\_sublist  
ABS:  $\text{dectt}(d)$  **dectt**  
STM: dectt\_wf  
STM: assert-dectt  
STM: inr\_equal  
STM: inl\_equal  
STM: inl\_eq\_inr  
STM: inr\_eq\_inl  
ABS: finite-type( $T$ ) **finite-type**  
STM: finite-type\_wf  
STM: finite-type-iff-list

STM: finite-type-bool  
STM: finite-set-type  
STM: finite-decidable-set  
STM: finite-subtype  
STM: map-map  
STM: map\_is\_nil  
STM: map-id  
STM: length-map  
STM: length-map-sq  
STM: select-map  
STM: pairwise-map  
STM: pairwise-map2  
STM: general\_length\_nth\_tl  
STM: nth\_tl\_nil  
ABS:  $\mu(f)$  **mu**  
STM: mu\_wf  
STM: mu\_wf2  
STM: mu-property  
STM: mu-property2  
STM: mu-bound  
STM: mu-bound-property  
STM: mu-bound-property+  
STM: mu-bound-unique  
ABS: upto( $n$ ) **upto**  
STM: upto\_wf  
STM: length\_upto  
STM: upto\_is\_nil

STM: upto\_decomp  
STM: upto\_iseg  
STM: select\_upto  
STM: member\_upto  
STM: member\_upto2  
STM: before\_upto  
STM: list\_eq\_set\_type  
STM: before\_map  
STM: filter\_append\_sq  
STM: filter\_map\_upto  
STM: filter\_map\_upto2  
STM: member\_firstn  
STM: first0  
STM: firstn\_decomp2  
STM: append\_firstn\_lastn\_sq  
STM: last\_lemma\_sq  
STM: last\_map  
STM: firstn\_firstn  
STM: firstn\_last  
STM: firstn\_append  
STM: firstn\_length  
STM: firstn\_all  
STM: firstn\_map  
STM: firstn\_upto  
STM: map\_is\_append  
STM: map\_is\_cons  
STM: decidable\_last\_rel

STM: decidable-exists-iseg  
STM: decidable\_l\_exists\_better-extract  
STM: decidable\_l\_all-better-extract  
STM: first-iseg  
STM: iseg-transition-lemma  
ABS:  $\text{concat}(ll)$  **concat**  
STM: concat\_wf  
STM: concat\_append  
STM: concat-cons  
STM: concat-nil  
STM: map-concat  
STM: filter-concat  
STM: select\_concat  
STM: member-concat  
STM: l\_member\_decomp  
STM: concat-decomp  
STM: last-concat  
STM: concat\_iseg  
STM: concat\_map\_upto  
STM: concat-is-nil  
STM: finite-type-product  
STM: finite-type-union  
STM: finite-type-unit  
ABS:  $\text{star-append}(T;P;Q)$  **star-append**  
STM: star-append\_wf  
STM: star-append-iff  
STM: finite-set-type-cases



ABS:  $\text{mapl}(f;l)$  **mapl**  
 STM: mapl\_wf  
 STM: member-mapl  
 STM: pairwise-mapl  
 STM: pairwise-mapl-no-repeats  
 STM: no\_repeats\_map  
 STM: no\_repeats-append  
 STM: member-reverse  
 STM: no\_repeats\_reverse  
 STM: length-reverse  
 STM: reverse-append  
 STM: reverse-reverse  
 STM: sublist-reverse  
 STM: last-reverse  
 STM: hd-reverse  
 STM: adjacent-reverse  
 ABS:  $\text{CV}(F)$  **CV**  
 STM: CV\_wf  
 STM: CV\_property  
 ABS:  $b = \text{accum}(z,x.f(z;x),a,\{x \in X | P(x)\})$  **accum\_filter\_rel**  
 STM: accum\_filter\_rel\_wf  
 STM: accum\_filter\_rel\_nil  
 STM: concat-map-decide  
 STM: map-decide  
 STM: concat-map-map-decide  
 STM: void-list-equality  
 STM: void-list-equality2

STM: void-list-equality3  
 STM: equal-nil-lists  
 ABS:  $\text{SWellFounded}(R(x;y))$  **strongwellfounded**  
 STM: strongwellfounded\_wf  
 STM: strongwf-implies  
 STM: strongwf-monotone  
 ABS:  $\text{p-graph}(A;f)$  **p-graph**  
 STM: p-graph\_wf  
 STM: p-graph\_wf2  
 ABS:  $\text{final-iterate}(f;x)$  **final-iterate**  
 STM: final-iterate\_wf  
 STM: final-iterate-property  
 STM: same-final-iterate-one-one  
 ABS:  $R|P$  **rel-restriction**  
 STM: rel-restriction\_wf  
 STM: rel-restriction-implies  
 STM: restriction-of-transitive  
 STM: restriction-to-field  
 ABS:  $R^+$  **rel\_plus**  
 STM: rel\_plus\_wf  
 STM: rel\_plus\_trans  
 STM: rel\_plus\_strongwellfounded  
 STM: rel\_plus\_implies  
 STM: rel\_plus\_implies2  
 STM: rel\_exp\_iff  
 STM: rel\_exp\_iff2  
 STM: rel\_exp\_one

STM: rel\_plus\_closure  
 STM: rel\_star\_iff  
 STM: rel\_star\_iff2  
 STM: rel\_star\_iff\_rel\_plus\_or  
 ABS: rel\_path( $R;L$ ) **rel-path**  
 STM: rel\_path\_wf  
 ABS: rel\_path\_between( $T;R;x;y;L$ ) **rel-path-between**  
 STM: rel\_path\_between\_wf  
 STM: rel\_path\_between\_cons  
 STM: rel\_exp\_iff\_path  
 STM: rel\_star\_iff\_path  
 STM: rel\_rel\_plus  
 STM: rel\_star\_rel\_plus  
 STM: rel\_star\_rel\_plus2  
 STM: rel\_plus\_rel\_star  
 STM: rel\_plus\_iff  
 STM: rel\_plus\_iff2  
 STM: rel\_plus\_monotone  
 STM: rel\_plus\_functionality\_wrt\_rel\_implies  
 STM: rel\_star\_functionality\_wrt\_rel\_implies  
 STM: rel\_exp\_functionality\_wrt\_rel\_implies  
 STM: rel\_plus\_functionality\_wrt\_brle  
 STM: rel\_star\_functionality\_wrt\_brle  
 STM: rel\_exp\_functionality\_wrt\_brle  
 STM: rel\_plus\_functionality\_wrt\_breqv  
 STM: rel\_star\_functionality\_wrt\_breqv  
 STM: rel\_exp\_functionality\_wrt\_breqv

STM: rel\_plus\_minimal  
STM: rel\_plus\_idempotent  
STM: rel\_exp\_functionality\_wrt\_iff  
STM: rel\_plus\_functionality\_wrt\_iff  
STM: rel\_plus\_field  
STM: rel\_plus-of-restriction  
STM: rel\_plus-restriction-equiv  
ABS: one-one( $A;B;R$ ) **one-one**  
STM: one-one\_wf  
STM: rel\_exp-one-one  
STM: rel\_exp-add-iff  
STM: map-upto-length  
STM: filter-equals  
STM: implies-filter-equal  
ABS: l-ordered( $T;x,y.R(x;y);L$ ) **l-ordered**  
STM: l-ordered\_wf  
STM: no\_repeats-before-equality  
STM: l-ordered-no\_repeats  
STM: no\_repeats-permute  
STM: l\_member-permute  
STM: split-at-first  
STM: l-ordered-equality  
STM: transitive-loop  
STM: transitive-loop2  
ABS: Generic $\{f:\mathbb{N} \rightarrow T | S(f)\}$  **generic**  
STM: generic\_wf  
STM: generic-non-empty

STM: pair-coding-exists  
 STM: finite-sequence-coding-exists  
 STM: generic-countable-intersection  
 ABS:  $|a/b - p/q| < 1/m$  **ratio-dist**  
 STM: ratio-dist\_wf  
 ABS:  $\mathbb{B}\text{size}(k;f)$  **bool-size**  
 STM: bool-size\_wf  
 ABS:  $\#\{i < j \mid f \text{ i eq } x\}$  **seq-count**  
 STM: seq-count\_wf  
 ABS:  $\text{frequency}(f;x) \sim (p/q)$  **frequency**  
 STM: frequency\_wf  
 ABS:  $\text{derived-seq}(f;s)$  **derived-seq**  
 STM: derived-seq\_wf  
 ABS:  $\text{eq\_seq}(eq)$  **eq\_seq**  
 STM: eq\_seq\_wf  
 ABS:  $\text{exp}(i;n)$  **exp**  
 STM: exp\_wf  
 ABS: let  $a,b,c,d,e,f,g,h = u$  in  $v(a;b;c;d;e;f;g;h)$  **spread8**  
 STM: decidable\_wellfounded\_bounded\_exists  
 STM: wellfounded-minimal  
 STM: wellfounded-minimal-field  
 STM: closure-well-founded-total  
 ABS:  $R!$  **rel-immediate**  
 STM: rel-immediate\_wf  
 STM: rel-immediate\_functionality\_wrt\_iff  
 STM: rel-immediate\_functionality\_wrt\_breqv  
 STM: rel-plus-rel-immediate

STM: rel-immediate-rel-plus

STM: rel-immediate-exists

ABS:  $\text{sum\_of\_torder}(T;R)$  **sum\_of\_torder**

STM: rel-is-immediate

STM: sum\_of\_torder\_wf

STM: rel-immediate-property

STM: rel-immediate-preserves-order

STM: mutual-primitive-recursion

ABS:  $A \sim B$  **equipollent**

STM: equipollent\_wf

STM: equipollent\_weakening

STM: equipollent\_inversion

STM: equipollent\_transitivity

STM: product\_functionality\_wrt\_equipollent\_left

STM: product\_functionality\_wrt\_equipollent\_right

STM: equipollent\_functionality\_wrt\_equipollent

STM: function\_functionality\_wrt\_equipollent\_left

STM: function\_functionality\_wrt\_equipollent\_right

STM: equipollent\_interval

STM: equipollent\_multiply

STM: equipollent\_zero

STM: equipollent\_void\_domain

STM: equipollent\_exp

ABS:  $P_1 \vee P_2$  **predicate\_or**

STM: predicate\_or\_wf

ABS:  $P_1 \Rightarrow P_2$  **predicate\_implies**

STM: predicate\_implies\_wf

ABS:  $P_1 \Leftarrow P_2$  **predicate\_rev\_implies**

STM: predicate\_rev\_implies\_wf

ABS:  $P_1 \iff P_2$  **predicate\_equivalent**

STM: predicate\_equivalent\_wf

STM: predicate\_equivalent\_implies

STM: predicate\_implies\_weakening

STM: predicate\_rev\_implies\_weakening

STM: predicate\_equivalent\_weakening

STM: predicate\_implies\_reflexivity

STM: predicate\_implies\_transitivity

STM: predicate\_equivalent\_transitivity

STM: predicate\_equivalent\_inversion

STM: predicate\_or\_idempotent

STM: rel\_or-restriction

ABS:  $R_1 \iff R_2$  **rel\_equivalent**

STM: rel\_equivalent\_wf

STM: rel\_equivalent\_weakening

STM: rel\_implies\_weakening

STM: rel\_implies\_transitivity

STM: rel\_equivalent\_transitivity

STM: rel\_equivalent\_inversion

ABS:  $R_1 \Leftarrow R_2$  **rel\_rev\_implies**

STM: rel\_rev\_implies\_wf

STM: rel\_rev\_implies\_weakening

STM: rel\_implies\_functionality

STM: rel\_or\_idempotent

ABS:  $y = f^*(x)$  via  $L$  **fun-path**

STM: fun-path\_wf  
 STM: fun-path-member  
 STM: fun-path-cons  
 STM: fun-path-fixedpoint  
 STM: fun-path-append  
 ABS:  $y$  is  $f^*(x)$  **fun-connected**  
 STM: fun-connected\_wf  
 STM: fun-connected-induction  
 STM: fun-path-induction  
 ABS:  $y = f^+(x)$  **strict-fun-connected**  
 STM: strict-fun-connected\_wf  
 STM: strict-fun-connected\_irreflexivity  
 STM: fun-connected\_weakening\_eq  
 STM: fun-connected\_weakening  
 STM: fun-connected-step  
 STM: fun-connected-step-back  
 STM: strict-fun-connected-step  
 STM: strict-fun-connected-induction  
 STM: fun-connected\_transitivity  
 STM: fun-connected-test  
 STM: fun-connected-tree  
 STM: fun-connected-fixedpoint  
 STM: fun-path-member-connected  
 STM: fun-path-before  
 ABS:  $\text{retraction}(T;f)$  **retraction**  
 STM: retraction\_wf  
 STM: retraction-fun-path



STM: fun-connected\_antisymmetry  
STM: strict-fun-connected\_transitivity1  
STM: strict-fun-connected\_transitivity2  
STM: strict-fun-connected\_transitivity3  
STM: fun-path-no\_repeats  
STM: retraction-fun-path-before  
STM: retraction-fixedpoint  
STM: strong-fun-connected-induction  
STM: decidable\_fun-connected  
STM: between-fun-connected