



## Up Help

- 0 0 sup
- 1 0 To!! ==
- 2 0 ToNegatedDoubleImply
- 3 0 ToNegatedAnd(1)
- 4 0 AddNegatedAll
- 5 0 (A)to( E )(Imply)
- 6 0 (E)to( A )(Imply)
- 7 0 (E )to( A )(Imply)
- 8 0 ToNegatedAEA
- 9 0 UniqueNegative
- 10 0 DoubleMinus
- 11 0 MinusNegated
- 12 0 eqReflexivity
- 13 0 eqSymmetry
- 14 0 eqTransitivity
- 15 0 eqTransitivity4
- 16 0 eqTransitivity5
- 17 0 eqTransitivity6
- 18 0 AddEquations
- 19 0 SubtractEquations
- 20 0 SubtractEquationsLeft
- 21 0 MultiplyEquations
- 22 0 EqNegated
- 23 0 PositiveToRight(Eq)
- 24 0 PositiveToLeft(Eq)
- 25 0 PositiveToLeft(Eq)(1term)
- 26 0 NegativeToLeft(Eq)
- 27 0 NonreciprocalToRight(Eq)(1term)
- 28 0 DistributionOut(Minus)

29 0 PositiveToRight(Eq)(1term)  
30 0 SameSeries(NumDiff)  
31 0 PlusAssociativity(4terms)  
32 0 LessNeq  
33 0 NeqSymmetry  
34 0 NeqNegated  
35 0 SubNeqRight  
36 0 SubNeqLeft  
37 0 NegativeToRight(Neq)(1term)  
38 0 NeqAddition  
39 0 NeqMultiplication  
40 0 NonzeroProduct(2)  
41 0 SwitchTerms( $x \leq y - z$ )  
42 0 NegativeToLeft(Less)(1term)  
43 0 (+1)IsPositive(N)  
44 0  $(1/2)(x + y) - x = (1/2)(y - x)$   
45 0  $y - (1/2)(x + y) = (1/2)(y - x)$   
46 0 ExpZero(Exact)  
47 0 SameExp(Base)  
48 0 SameExp(Indu)  
49 0 SameExp  
50 0 Exp(+1)  
51 0 PositiveBase(Base)  
52 0 PositiveBase(Indu)  
53 0 PositiveBase  
54 0 BSzero(Exact)  
55 0 SameBS(2)(Base)  
56 0 SameBS(2)(Indu)  
57 0 SameBS(2)  
58 0 BS(+1)  
59 0 BSbound(Exact)(Base)  
60 0 BSbound(Exact)(Indu)  
61 0 BSbound(Exact)  
62 0 BSbound

63 0 UTelescope(Zero)(Exact)  
64 0 SameTelescope(2)(Base)  
65 0 SameTelescope(2)(Indu)  
66 0 SameTelescope(2)  
67 0 UTelescope(+1)  
68 0 TelescopeNumerical(Base)  
69 0 TelescopeNumerical(Indu)  
70 0 TelescopeNumerical  
71 0 TelescopeBound(Base)  
72 0 TelescopeBound(Indu)  
73 0 TelescopeBound  
74 0 LessNeq(F)(Helper)  
75 0 LessNeq(F)  
76 0 LessNeq(R)  
77 0 IntervalSize(Base)  
78 0 IntervalSize(Indu)  
79 0 IntervalSize  
80 0  $XS < US$   
81 0 lemma USdecreasing(+1)  
82 0 CloseUS  
83 0 CloseUS( $n + 1$ )  
84 0 AllNegated(ImPLY)  
85 0 ExistNegated(ImPLY)  
86 0 IntroExist(Helper)  
87 0 IntroExist  
88 0 ExistMP  
89 0 ExistMP2  
90 0 TwiceExistMP  
91 0 TwiceExistMP2  
92 0 EAE – MP  
93 0 AddAll  
94 0 AddExist(Helper1)  
95 0 AddExist(Helper2)  
96 0 AddExist

97 0 AddExist(SimpleAnt)  
98 0 AddExist(Simple)  
99 0 AddEAE  
100 0 AEA – negated  
101 0 EEA – negated  
102 0 Induction  
103 0 leqAntisymmetry  
104 0 leqTransitivity  
105 0 leqAddition  
106 0 leqMultiplication  
107 0 Reciprocal  
108 0 Equality  
109 0 eqLeq  
110 0 eqAddition  
111 0 eqMultiplication  
112 0 LeqMultiplicationLeft  
113 0 LeqLessEq  
114 0 LessLeq  
115 0 FromLeqGeq  
116 0 subLeqRight  
117 0 subLeqLeft  
118 0 Leq + 1  
119 0 PositiveToRight(Leq)  
120 0 PositiveToRight(Leq)(1term)  
121 0 lemma negativeToRight(Leq)  
122 0 PositiveToLeft(Leq)  
123 0 negativeToLeft(Leq)  
124 0 negativeToLeft(Leq)(1term)  
125 0 LeqAdditionLeft  
126 0 leqSubtraction  
127 0 leqSubtractionLeft  
128 0 thirdGeq  
129 0 LeqNegated  
130 0 AddEquations(Leq)

131 0 MultiplyEquations(Leq)  
132 0 ThirdGeqSeries  
133 0 LeqNeqLess  
134 0 FromLess  
135 0 ToLess  
136 0 fromNotLess  
137 0 toNotLess  
138 0 NegativeLessPositive  
139 0 leqLessTransitivity  
140 0 LessLeqTransitivity  
141 0 LessTransitivity  
142 0 LessTotality  
143 0 SubLessRight  
144 0 SubLessLeft  
145 0 SwitchTerms( $x < y - z$ )  
146 0 SwitchTerms( $x - y < z$ )  
147 0 LessAddition  
148 0 LessAdditionLeft  
149 0 LessMultiplication  
150 0 LessMultiplicationLeft  
151 0 LessDivision  
152 0 PositiveToRight(Less)  
153 0 PositiveToLeft(Less)  
154 0 NegativeToLeft(Less)  
155 0 NegativeToRight(Less)  
156 0 AddEquations(Less)  
157 0 AddEquations(LeqLess)  
158 0 reciprocalToLeft(Less)  
159 0 LessNegated  
160 0 PositiveNonzero  
161 0 PositiveNegated  
162 0 NonpositiveNegated  
163 0 NegativeNegated  
164 0 NonnegativeNegated

165 0 PositiveHalved  
166 0 PositiveInverted  
167 0 NonnegativeNumerical  
168 0 NegativeNumerical  
169 0 PositiveNumerical  
170 0 lemma nonpositiveNumerical  
171 0  $|0| = 0$   
172 0  $0 \leq |x|$   
173 0  $x \leq |x|$   
174 0 FromPositiveNumerical  
175 0 SameNumerical  
176 0 SignNumerical(+)  
177 0 SignNumerical  
178 0 ToNumericalLess  
179 0 FromNumericalGreater  
180 0 NumericalDifference  
181 0 NumericalDifferenceLess(Helper)  
182 0 NumericalDifferenceLess  
183 0 SplitNumericalSumHelper  
184 0 splitNumericalSum(++)  
185 0 splitNumericalSum(--)  
186 0 splitNumericalSum(+ - small)  
187 0 splitNumericalSum(+ - big)  
188 0 splitNumericalSum(+ -)  
189 0 splitNumericalSum(- +)  
190 0 splitNumericalSum  
191 0 SplitNumericalProduct(++)  
192 0 SplitNumericalProduct(+ -)  
193 0 SplitNumericalProduct  
194 0 insertMiddleTerm(Numerical)  
195 0 insertTwoMiddleTerms(Numerical)  
196 0 Three2twoTerms  
197 0 Three2threeTerms  
198 0 Three2twoFactors

199 0 Three2threeFactors  
200 0 Times(-1)  
201 0 Times(-1)Left  
202 0 MaxLeq(1)  
203 0 MaxLeq(2)  
204 0 LessThanMax  
205 0  $x + y = z$ Backwards  
206 0  $x * y = z$ Backwards  
207 0  $x = x + (y - y)$   
208 0  $x = x + y - y$   
209 0  $x = x * y * (1/y)$   
210 0 insertMiddleTerm(Sum)  
211 0 insertTwoMiddleTerms(Sum)  
212 0 insertMiddleTerm(Difference)  
213 0  $x * 0 + x = x$   
214 0  $x * 0 = 0$   
215 0 NonnegativeFactors  
216 0 NonzeroFactors  
217 0 PositiveFactors  
218 0 PlusTimesMinus  
219 0 MinusTimesMinus  
220 0  $(-1) * (-1) + (-1) * 1 = 0$   
221 0  $(-1) * (-1) = 1$   
222 0  $0 < 1$ Helper  
223 0  $0 < 1$   
224 0  $0 < 2$   
225 0  $0 < 3$   
226 0  $0 < 1/2$   
227 0  $0 < 1/3$   
228 0 TwoWholes  
229 0 ThreeWholes  
230 0 TwoHalves  
231 0 ThreeThirds  
232 0  $-x - y = -(x + y)$

233 0  $-x * y = -(x * y)$   
 234 0  $-0 = 0$   
 235 0 SFsymmetry  
 236 0 SFtransitivity  
 237 0 f2R(Plus)  
 238 0 f2R(Times)  
 239 0  $\ll$  TransitivityHelper(Q)  
 240 0  $\ll$  Transitivity  
 241 0  $\ll==$  Reflexivity  
 242 0  $\ll==$  AntisymmetryHelper(Q)  
 243 0 FromNot  $<$  f(Weak)(Helper)  
 244 0 FromNot  $<$  f(Weak)  
 245 0 FromNot  $<$  f(Strong)(Helper2)  
 246 0 FromNot  $<$  f(Strong)(Helper)  
 247 0 FromNot  $<$  f(Strong)  
 248 0 fromNotSameF(Strongest)(Helper2)  
 249 0 fromNotSameF(Strongest)(Helper)  
 250 0 fromNotSameF(Strongest)  
 251 0 ToLess(F)(Helper)  
 252 0 ToLess(F)  
 253 0 FromNot  $\ll$   
 254 0 ToLess(R)  
 255 0 LeqTotality(R)  
 256 0 FromNotSameF(Weak)(Helper)  
 257 0 FromNotSameF(Weak)  
 258 0 FromNotLess(F)  
 259 0  $==$  Addition  
 260 0  $==$  AdditionLeft  
 261 0 Fpart – Bounded(Base)  
 262 0 Fpart – Bounded(InduHelper)  
 263 0 Fpart – Bounded(Indu)  
 264 0 Fpart – Bounded  
 265 0 F – Bounded(Helper)  
 266 0 F – Bounded



267 0 SameFmultiplication(Helper)  
268 0 SameFmultiplication  
269 0 EqMultiplication(R)  
270 0 EqMultiplicationLeft(R)  
271 0  $x * 0 = 0(F)$   
272 0  $x * 0 = 0(R)$   
273 0 LessMultiplication(F)(Helper2)  
274 0 LessMultiplication(F)(Helper)  
275 0 LessMultiplication(F)  
276 0 LessMultiplication(R)  
277 0 LeqMultiplication(R)  
278 0 PlusAssociativity(F)  
279 0 Plus0(F)  
280 0 PlusCommutativity(F)  
281 0 TimesAssociativity(F)  
282 0 Times1f  
283 0 Cauchy(2)(Helper)  
284 0 Cauchy(2)  
285 0 ReciprocalFnonzero  
286 0 ReciprocalFnynonzero  
287 0 (Eventually = f)<sup>2</sup>sameF(Helper)  
288 0 (Eventually = f)<sup>2</sup>sameF  
289 0 FromNotSameF(Strong)(Helper2)  
290 0 FromNotSameF(Strong)(Helper)  
291 0 FromNotSameF(Strong)  
292 0 SameFreciprocal(Helper)  
293 0 SameFreciprocal  
294 0 From!! ==  
295 0 Reciprocal(R)  
296 0 TimesCommutativity(F)  
297 0 Distribution(F)  
298 0 FromMax(1)  
299 0 FromMax(2)  
300 0 ToNegatedAnd

301 0 PositiveToRight(Less)(1term)  
 302 0 (A )to( E)  
 303 0 lemma ==Transitivity4  
 304 0 Plus0Left(R)  
 305 0  $x = x + (y - y)$ (R)  
 306 0  $x = x + y - y$ (R)  
 307 0 PositiveToRight(Eq)(R)  
 308 0 SubtractEquations(R)  
 309 0 NeqAddition(R)  
 310 0 EqAdditionLeft(R)  
 311 0 Three2twoTerms(R)  
 312 0 PositiveToRight(Less)(R)  
 313 0 Three2threeTerms(R)  
 314 0 PositiveToRight(Less)(1term)(R)  
 315 0 ToLeq(Advanced)(R)  
 316 0 LeqNeqLess(R)  
 317 0 SubLeqLeft(R)  
 318 0 LeqLessTransitivity(R)  
 319 0 NegativeToLeft(Eq)(R)  
 320 0 NegativeToRight(Less)(R)  
 321 0 !! == Symmetry  
 322 0 NegativeToRight(Eq)(R)  
 323 0 NegativeToRight(Eq)(1term)(R)  
 324 0 DoubleMinus(R)  
 325 0 UniqueNegative(R)  
 326 0 SubtractEquationsLeft(R)  
 327 0 EqNegated(R)  
 328 0 NeqNegated(R)  
 329 0 LeqNegated(R)  
 330 0 LessNegated(R)  
 331 0  $-0 = 0$ (R)  
 332 0 NegativeNegated(R)  
 333 0 FromLeqGeq(R)  
 334 0 SubLeqRight(R)

335 0 FromLess(R)  
 336 0 NonnegativeNumerical(R)  
 337 0 NegativeNumerical(R)  
 338 0  $0 \leq |x|$ (R)  
 339 0 PositiveNegated(R)  
 340 0 AddEquations(R)  
 341 0 DistributionOut(R)  
 342 0 == Transitivity5  
 343 0  $x * 0 + x = x$ (R)  
 344 0  $x * 0 = 0$ (R)(fff)  
 345 0 Times(-1)(R)  
 346 0 Times(-1)Left(R)  
 347 0  $-x - y = -(x + y)$ (R)  
 348 0 LessTotality(R)  
 349 0 PositiveNumerical(R)  
 350 0 SignNumerical(+)(R)  
 351 0 SameNumerical(R)  
 352 0 MinusNegated(R)  
 353 0 SignNumerical(R)  
 354 0 NumericalDifference(R)  
 355 0  $x \leq |x|$ (R)  
 356 0 USlimitIsUpperBound(Helper)  
 357 0 USlimitIsUpperBound  
 358 0  $(-1) * (-1) + (-1) * 1 = 0$ (R)  
 359 0  $(-1) * (-1) = 1$ (R)  
 360 0  $0 < 1$ Helper(R)  
 361 0  $0 < 1$ (R)  
 362 0 ExpZero(Exact)(R)  
 363 0 PositiveBase(R)(Base)  
 364 0 Three2twoFactors(R)  
 365 0  $x = x * y * (1/y)$ (R)  
 366 0 NeqMultiplication(R)  
 367 0 LessTransitivity(R)  
 368 0  $0 < 2$ (R)

369 0 SameExp(R)(Base)  
370 0 SameExp(R)(Indu)  
371 0 SameExp(R)  
372 0 SubNeqLeft(R)  
373 0 SubNeqRight(R)  
374 0 NonzeroFactors(R)  
375 0 NonnegativeFactors(R)  
376 0 PositiveFactors(R)  
377 0 LessDivision(R)  
378 0  $0 < 1/2$ (R)  
379 0 PositiveToRight(Eq)(1term)(R)  
380 0 Exp(+1)(R)  
381 0 PositiveBase(R)(Indu)  
382 0 PositiveBase(R)  
383 0  $-x * y = -(x * y)$ (R)  
384 0 PositiveToLeft(Eq)(R)  
385 0 Times1Left(R)  
386 0 == Transitivity6  
387 0  $x + x = 2 * x$ (R)  
388 0  $(1/2)x + (1/2)x = x$ (R)  
389 0 DistributionOut(Minus)(R)  
390 0  $(1/2)(x + y) - x = (1/2)(y - x)$ (R)  
391 0 IntervalSize(R)(Base)  
392 0 LessMultiplicationLeft(R)  
393 0 NegativeToLeft(Less)(R)  
394 0 NegativeToLeft(Less)(1term)(R)  
395 0  $y - (1/2)(x + y) = (1/2)(y - x)$ (R)  
396 0 IntervalSize(R)(Indu)  
397 0 IntervalSize(R)  
398 0 XSlessUS(R)  
399 0 USdecreasing(+1)(R)  
400 0 ExpUnbounded(Base)  
401 0 ExpUnbounded(Indu)  
402 0 ExpUnbounded

403 0  $1 \leq x + 1(N)$   
 404 0 NonzeroProduct(2)(R)  
 405 0 PositiveNonzero(R)  
 406 0 NonreciprocalToRight(Eq)(1term)(R)  
 407 0 ExpNonzero(Base)  
 408 0 ExpNonzero(Indu)  
 409 0 ExpNonzero  
 410 0 ExpNonzero(2)  
 411 0 MultiplyEquations(R)  
 412 0 HalfBase(Base)  
 413 0 HalfBase(Indu)  
 414 0 HalfBase  
 415 0 Three2threeFactors(R)  
 416 0  $x * y = z$ Backwards(R)  
 417 0 PositiveInverted(R)  
 418 0 ReciprocalToRight(Less)(R)  
 419 0 ReciprocalToRight(Less)(1term)(R)  
 420 0 NonreciprocalToLeft(Less)(R)  
 421 0  $1 < x * y(R)$   
 422 0 SwitchFactors( $1/x < y$ )(R)  
 423 0 SmallHalving  
 424 0 IntervalSize(anyPositive)  
 425 0 USdecreasing(+n)(Base)  
 426 0 USdecreasing(+n)(Indu)  
 427 0 USdecreasing(+n)  
 428 0 USdecreasing  
 429 0 LeqAdditionLeft(R)  
 430 0 ToNotLess(R)  
 431 0 LimitOfUSIsLeq  
 432 0 SubtractEquations(Less)(R)  
 433 0 SubtractEquationsLeft(Less)(R)  
 434 0 LessNegated(Negative)(R)  
 435 0 FromNegatedAnd(Imply)  
 436 0 RemoveDoubleNeg(Consequent)

437 0 FromNotUpperBound  
438 0 DistributionOut  
439 0 DistributionOutLeft  
440 0 DistributionLeft  
441 0 LeqNUB  
442 0 USlimitIsLeastUpperBound(Helper)  
443 0 USlimitIsLeastUpperBound  
444 0 FromNotLess(R)  
445 0 ExistMP3  
446 0 GreaterPositive(N)  
447 0 ysFClose(Helper)  
448 0 ysFClose  
449 0 ysFCauchy(Helper)  
450 0 ysFCauchy  
451 0 CartProdIsRelation  
452 0 FromSubset  
453 0 SubsetIsRelation  
454 0 ToSeries  
455 0 FromSeries  
456 0 SeriesSubsetCP  
457 0 ValueType  
458 0 RemoveOr  
459 0 FromSingleton  
460 0 InPair(1)  
461 0 InPair(2)  
462 0 SameMember(2)  
463 0 ToBinaryUnion(1)  
464 0 ToBinaryUnion(2)  
465 0 FromOrderedPair(TwoLevels)  
466 0 ToCartProd(Helper)  
467 0 ToCartProd  
468 0 NonreciprocalToRight(Eq)  
469 0 NonreciprocalToLeft(Eq)(1term)  
470 0 SameReciprocal

471 0 CPseparationIsRelation  
472 0 OrderedPairEquality  
473 0 ReciprocalIsFunction  
474 0 ReciprocalIsTotal  
475 0 ReciprocalIsRationalSeries  
476 0 CrsIsRelation  
477 0 CrsIsFunction  
478 0 CrsIsTotal  
479 0 CrsIsSeries  
480 0 CrsLookup  
481 0 Of  
482 0 If  
483 0 ToSingleton  
484 0 FromSameSingleton  
485 0 SingletonmembersEqual  
486 0 UnequalsNotInSingleton  
487 0 NonsingletonmembersUnequal  
488 0 FromOrderedPair  
489 0 FromOrderedPair(1)  
490 0 FromOrderedPair(2)  
491 0 FromCartProd  
492 0 FromCartProd(1)  
493 0 FromCartProd(2)  
494 0 sameOrderedPair  
495 0 InSeriesHelper  
496 0 InSeries  
497 0 To = f(Subset)(Helper)  
498 0 To = f(Subset)  
499 0 To = f  
500 0 productIsFunction  
501 0 productIsTotal  
502 0 ProductIsRationalSeries  
503 0 TimesF  
504 0  $-x + (1/2)x = -(1/2)x$

505 0 PositiveTripled  
506 0 PositiveDividedBy3  
507 0  $|x - x| = 0$   
508 0  $1 < 2$   
509 0  $1/3 < 2/3$   
510 0  $(1/3)x + (1/3)x = (2/3)x$   
511 0  $(2/3)x + (1/3)x = x$   
512 0  $-x + (2/3)x = -(1/3)x$   
513 0  $-(1/3)x - (1/3)x = -(2/3)x$   
514 0  $-x + (1/3)x = -(2/3)x$   
515 0 PreserveLessGreater  
516 0 ClosetolessIsLess  
517 0 SubLessLeft(F)  
518 0 SubLessLeft(R)  
519 0 ClosetogreaterIsGreater  
520 0 SubLessRight(F)  
521 0 SubLessRight(R)  
522 0 Tester1  
523 0 Tester2  
524 0 Tester3  
525 0 Tester4  
526 0 Tester5  
527 0 Tester6

*The pyk compiler, version 0.grue.20060417+ by Klaus Grue  
GRD-2006-12-08.UTC:16:16:16.345569 = MJD-54077.TAI:16:16:49.345569 =  
LGT-4672311409345569e-6*