ANA axioms

ANA001-0.ax Analysis (limits) axioms for continuous functions
$x + n_0 = x$ cnf(right_identity, axiom)
$n_0 + x = x$ cnf(left_identity, axiom)
$\neg\, x < x$ cnf(reflexivity_of_less_than, axiom)
$(x < y \text{ and } y < z) \Rightarrow x < z$ cnf(transitivity_of_less_than, axiom)
$(n_0 < x \text{ and } n_0 < y) \Rightarrow n_0 < \min(x, y)$ cnf(axiom_2$_1$, axiom)
$(n_0 < x \text{ and } n_0 < y) \Rightarrow \min(x, y) < x$ cnf(axiom_2$_2$, axiom)
$(n_0 < x \text{ and } n_0 < y) \Rightarrow \min(x, y) < y$ cnf(axiom_2$_3$, axiom)
$(x < \text{half}(\text{xa}) \text{ and } y < \text{half}(\text{xa})) \Rightarrow x + y < \text{xa}$ cnf(axiom$_3$, axiom)
$|x| + |y| < \text{xa} \Rightarrow |x + y| < \text{xa}$ cnf(c_{17}, axiom)
$(x + y) + z = x + (y + z)$ cnf(axiom$_5$, axiom)
$x + y = y + x$ cnf(axiom_6$_1$, axiom)
$n_0 < \text{xa} \Rightarrow n_0 < \text{half}(\text{xa})$ cnf(axiom_6$_2$, axiom)
$n_0 < \text{xa} \Rightarrow n_0 < \text{half}(\text{xa})$ cnf(axiom$_7$, axiom)
$-(x + y) = -x + -y$ cnf(axiom$_8$, axiom)

ANA002-0.ax Analysis (limits) axioms for continuous functions
$|x + y| \le |x| + |y|$ cnf(absolute_sum_less_or_equal_sum_of_absolutes$_1$, axiom)
$|x| + |y| \le z \Rightarrow |x + y| \le z$ cnf(absolute_sum_less_or_equal_sum_of_absolutes$_2$, axiom)
$x \le y \Rightarrow \min(x, y) = x$ cnf(minimum$_1$, axiom)
$\min(x, y) \le x$ cnf(minimum$_2$, axiom)
$z \le \min(x, y) \Rightarrow z \le x$ cnf(minimum$_3$, axiom)
$x \le y \Rightarrow x \le \min(x, y)$ cnf(minimum$_4$, axiom)
$y \le x \Rightarrow \min(x, y) = y$ cnf(minimum$_5$, axiom)
$\min(x, y) \le y$ cnf(minimum$_6$, axiom)
$z \le \min(x, y) \Rightarrow z \le y$ cnf(minimum$_7$, axiom)
$y \le x \Rightarrow y \le \min(x, y)$ cnf(minimum$_8$, axiom)
$\min(x, y) \le n_0 \Rightarrow (x \le n_0 \text{ or } y \le n_0)$ cnf(minimum$_9$, axiom)
$\text{half}(x) + \text{half}(x) = x$ cnf(half_plus_half_is_whole, axiom)
$\text{half}(x) + \text{half}(x) \le x$ cnf(half_plus_half_less_or_equal_whole, axiom)
$x \le \text{half}(x) + \text{half}(x)$ cnf(whole_less_or_equal_half_plus_half, axiom)
$(x \le \text{half}(z) \text{ and } y \le \text{half}(z)) \Rightarrow x + y \le z$ cnf(less_or_equal_sum_of_halves, axiom)
$\text{half}(x) \le n_0 \Rightarrow x \le n_0$ cnf(zero_and_half, axiom)
$x \le y \Rightarrow x + z \le y + z$ cnf(add_to_both_sides_of_less_equal$_1$, axiom)
$(x \le y \text{ and } z \le w) \Rightarrow x + z \le y + w$ cnf(add_to_both_sides_of_less_equal$_2$, axiom)
$x \le y \text{ or } y \le x$ cnf(commutativity_of_less_or_equal, axiom)
$(x \le y \text{ and } y \le z) \Rightarrow x \le z$ cnf(transitivity_of_less_or_equal, axiom)
$x + y = y + x$ cnf(commutativity_of_add, axiom)
$x + y \le y + x$ cnf(commutativity_of_add_for_less_or_equal, axiom)
$(x + y) + z = x + (y + z)$ cnf(associativity_of_add, axiom)
$(x + y) + z \le x + (y + z)$ cnf(associativity_of_add_for_less_or_equal$_1$, axiom)
$x + (y + z) \le (x + y) + z$ cnf(associativity_of_add_for_less_or_equal$_2$, axiom)
$x = y \Rightarrow x \le y$ cnf(equal_implies_less_or_equal, axiom)

ANA problems

ANA001-1.p Attaining minimum (or maximum) value
A continuous function f in a closed real interval [a,b] attains its minimum (or maximum) in this interval.
$x \le x$ cnf(refelxivity, axiom)
$x \le y \text{ or } y \le x$ cnf(totality, axiom)
$(x \le y \text{ and } y \le z) \Rightarrow x \le z$ cnf(transitivity, axiom)
$(x \le y \text{ and } y \le x) \Rightarrow f(x) \le f(y)$ cnf(function, hypothesis)
$(\text{lower} \le x \text{ and } x \le \text{upper}) \Rightarrow x \in [\text{lower}, \text{upper}]$ cnf(in_interval, hypothesis)
$a \le \text{extreme\_point}$ cnf(interval$_1$, hypothesis)
$\text{extreme\_point} \le b$ cnf(interval$_2$, hypothesis)
$x \in [a, \text{extreme\_point}] \Rightarrow f(\text{extreme\_point}) \le f(x)$ cnf(below_extreme_point, hypothesis)
$x \in [a, b] \Rightarrow (x \le \text{extreme\_point} \text{ or } a \le q(x))$ cnf(q_function$_1$, hypothesis)

$(x \in [a,b]$ and $f(x) \leq q(x)) \Rightarrow x \leq$ extreme_point   cnf(q_function$_2$, hypothesis)
$x \in [a,b] \Rightarrow (x \leq$ extreme_point or $q(x) \leq x)$ cnf(q_function$_3$, hypothesis)
$x \in [a,b] \Rightarrow a \leq h(x)$ cnf(h_function$_1$, hypothesis)
$x \in [a,b] \Rightarrow h(x) \leq b$ cnf(h_function$_2$, hypothesis)
$x \in [a,b] \Rightarrow f(h(x)) \leq f(x)$ cnf(h_function$_3$, hypothesis)
$(x \in [a,b]$ and $y \in [a,b]$ and $f(y) \leq f(x)) \Rightarrow h(x) \leq y$ cnf(h_function$_4$, hypothesis)
$x \in [a,b] \Rightarrow a \leq k(x)$ cnf(k_function$_1$, hypothesis)
$x \in [a,b] \Rightarrow k(x) \leq b$ cnf(k_function$_2$, hypothesis)
$f(x) \leq f(k(x)) \Rightarrow \neg x \in [a,b]$ cnf(prove_something, negated_conjecture)

ANA002-1.p Intermediate value theorem
If a function f is continuous in a real closed interval [a,b], where f(a)≤0 and 0≤f(b), then there exists X such that f(X) = 0.
(lower $\leq x$ and $x \leq$ upper) $\Rightarrow x \in$ [lower, upper]   cnf(in_interval, axiom)
$x \leq x$ cnf(reflexivity_of_less, axiom)
$x \leq y$ or $y \leq x$ cnf(totality_of_less, axiom)
$(x \leq y$ and $y \leq z) \Rightarrow x \leq z$ cnf(transitivity_of_less, axiom)
$x \leq q(y,x) \Rightarrow x \leq y$ cnf(interpolation$_1$, axiom)
$q(x,y) \leq x \Rightarrow y \leq x$ cnf(interpolation$_2$, axiom)
$(x \leq h(x)$ and $x \in [a,b]) \Rightarrow f(x) \leq n_0$ cnf(continuity$_1$, axiom)
$(y \leq x$ and $f(y) \leq n_0$ and $x \in [a,b]) \Rightarrow (f(x) \leq n_0$ or $y \leq h(x))$ cnf(continuity$_2$, axiom)
$(k(x) \leq x$ and $x \in [a,b]) \Rightarrow n_0 \leq f(x)$ cnf(continuity$_3$, axiom)
$(x \leq y$ and $n_0 \leq f(y)$ and $x \in [a,b]) \Rightarrow (n_0 \leq f(x)$ or $k(x) \leq y)$ cnf(continuity$_4$, axiom)
$(x \leq b$ and $f(x) \leq n_0) \Rightarrow x \leq l$ cnf(crossover$_1$, axiom)
$g(x) \leq b$ or $l \leq x$ cnf(crossover2_and_g_function$_1$, axiom)
$f(g(x)) \leq n_0$ or $l \leq x$ cnf(crossover3_and_g_function$_2$, axiom)
$g(x) \leq x \Rightarrow l \leq x$ cnf(crossover4_and_g_function$_3$, axiom)
$a \leq b$ cnf(the_interval, hypothesis)
$f(a) \leq n_0$ cnf(lower_mapping, hypothesis)
$n_0 \leq f(b)$ cnf(upper_mapping, hypothesis)
$\neg n_0 \in [f(x), f(x)]$ cnf(prove_there_is_x_which_crosses, negated_conjecture)

ANA002-2.p Intermediate value theorem
If a function f is continuous in a real closed interval [a,b], where f(a)≤0 and 0≤f(b), then there exists X such that f(X) = 0.
(lower $\leq x$ and $x \leq$ upper) $\Rightarrow x \in$ [lower, upper]   cnf(in_interval, axiom)
$x \leq x$ cnf(reflexivity_of_less, axiom)
$x \leq y$ or $y \leq x$ cnf(totality_of_less, axiom)
$(x \leq y$ and $y \leq z) \Rightarrow x \leq z$ cnf(transitivity_of_less, axiom)
$x \leq q(y,x) \Rightarrow x \leq y$ cnf(interpolation$_1$, axiom)
$q(x,y) \leq x \Rightarrow y \leq x$ cnf(interpolation$_2$, axiom)
$(x \leq h(x)$ and $x \in [a,b]) \Rightarrow f(x) \leq n_0$ cnf(continuity$_1$, axiom)
$(y \leq x$ and $f(y) \leq n_0$ and $x \in [a,b]) \Rightarrow (f(x) \leq n_0$ or $y \leq h(x))$ cnf(continuity$_2$, axiom)
$(k(x) \leq x$ and $x \in [a,b]) \Rightarrow n_0 \leq f(x)$ cnf(continuity$_3$, axiom)
$(x \leq y$ and $n_0 \leq f(y)$ and $x \in [a,b]) \Rightarrow (n_0 \leq f(x)$ or $k(x) \leq y)$ cnf(continuity$_4$, axiom)
$(x \leq b$ and $f(x) \leq n_0) \Rightarrow x \leq l$ cnf(crossover$_1$, axiom)
$g(x) \leq b$ or $l \leq x$ cnf(crossover2_and_g_function$_1$, axiom)
$f(g(x)) \leq n_0$ or $l \leq x$ cnf(crossover3_and_g_function$_2$, axiom)
$g(x) \leq x \Rightarrow l \leq x$ cnf(crossover4_and_g_function$_3$, axiom)
$a \leq b$ cnf(the_interval, hypothesis)
$f(a) \leq n_0$ cnf(lower_mapping, hypothesis)
$n_0 \leq f(b)$ cnf(upper_mapping, hypothesis)
$\neg n_0 \in [f(l), f(l)]$ cnf(prove_there_is_x_which_crosses, negated_conjecture)

ANA002-3.p Intermediate value theorem
If a function f is continuous in a real closed interval [a,b], where f(a)≤0 and 0≤f(b), then there exists X such that f(X) = 0.
$x \leq x$ cnf(reflexivity_of_less, axiom)
$x \leq y$ or $y \leq x$ cnf(totality_of_less, axiom)
$(x \leq y$ and $y \leq z) \Rightarrow x \leq z$ cnf(transitivity_of_less, axiom)
$x \leq q(y,x) \Rightarrow x \leq y$ cnf(interpolation$_1$, axiom)

$q(x,y) \leq x \;\Rightarrow\; y \leq x$ cnf(interpolation$_2$, axiom)
$(x \leq h(x)$ and $a \leq x$ and $x \leq b) \;\Rightarrow\; f(x) \leq n_0$ cnf(continuity$_1$, axiom)
$(y \leq x$ and $f(y) \leq n_0$ and $a \leq x$ and $x \leq b) \;\Rightarrow\; (f(x) \leq n_0$ or $y \leq h(x))$ cnf(continuity$_2$, axiom)
$(k(x) \leq x$ and $a \leq x$ and $x \leq b) \;\Rightarrow\; n_0 \leq f(x)$ cnf(continuity$_3$, axiom)
$(x \leq y$ and $n_0 \leq f(y)$ and $a \leq x$ and $x \leq b) \;\Rightarrow\; (n_0 \leq f(x)$ or $k(x) \leq y)$ cnf(continuity$_4$, axiom)
$(x \leq b$ and $f(x) \leq n_0) \;\Rightarrow\; x \leq l$ cnf(crossover$_1$, axiom)
$g(x) \leq b$ or $l \leq x$ cnf(crossover2_and_g_function$_1$, axiom)
$f(g(x)) \leq n_0$ or $l \leq x$ cnf(crossover3_and_g_function$_2$, axiom)
$g(x) \leq x \;\Rightarrow\; l \leq x$ cnf(crossover4_and_g_function$_3$, axiom)
$a \leq b$ cnf(the_interval, hypothesis)
$f(a) \leq n_0$ cnf(lower_mapping, hypothesis)
$n_0 \leq f(b)$ cnf(upper_mapping, hypothesis)
$f(x) \leq n_0 \;\Rightarrow\; \neg\, n_0 \leq f(x)$ cnf(prove_there_is_x_which_crosses, negated_conjecture)

ANA002-4.p Intermediate value theorem
If a function f is continuous in a real closed interval [a,b], where f(a)≤0 and 0≤f(b), then there exists X such that f(X) = 0.
$x \leq x$ cnf(reflexivity_of_less, axiom)
$x \leq y$ or $y \leq x$ cnf(totality_of_less, axiom)
$(x \leq y$ and $y \leq z) \;\Rightarrow\; x \leq z$ cnf(transitivity_of_less, axiom)
$x \leq q(y,x) \;\Rightarrow\; x \leq y$ cnf(interpolation$_1$, axiom)
$q(x,y) \leq x \;\Rightarrow\; y \leq x$ cnf(interpolation$_2$, axiom)
$(x \leq h(x)$ and $a \leq x$ and $x \leq b) \;\Rightarrow\; f(x) \leq n_0$ cnf(continuity$_1$, axiom)
$(y \leq x$ and $f(y) \leq n_0$ and $a \leq x$ and $x \leq b) \;\Rightarrow\; (f(x) \leq n_0$ or $y \leq h(x))$ cnf(continuity$_2$, axiom)
$(k(x) \leq x$ and $a \leq x$ and $x \leq b) \;\Rightarrow\; n_0 \leq f(x)$ cnf(continuity$_3$, axiom)
$(x \leq y$ and $n_0 \leq f(y)$ and $a \leq x$ and $x \leq b) \;\Rightarrow\; (n_0 \leq f(x)$ or $k(x) \leq y)$ cnf(continuity$_4$, axiom)
$(x \leq b$ and $f(x) \leq n_0) \;\Rightarrow\; x \leq l$ cnf(crossover$_1$, axiom)
$g(x) \leq b$ or $l \leq x$ cnf(crossover2_and_g_function$_1$, axiom)
$f(g(x)) \leq n_0$ or $l \leq x$ cnf(crossover3_and_g_function$_2$, axiom)
$g(x) \leq x \;\Rightarrow\; l \leq x$ cnf(crossover4_and_g_function$_3$, axiom)
$a \leq b$ cnf(the_interval, hypothesis)
$f(a) \leq n_0$ cnf(lower_mapping, hypothesis)
$n_0 \leq f(b)$ cnf(upper_mapping, hypothesis)
$f(l) \leq n_0 \;\Rightarrow\; \neg\, n_0 \leq f(l)$ cnf(prove_there_is_x_which_crosses, negated_conjecture)

ANA003-1.p Lemma 1 for the sum of two continuous functions is continuous
A lemma formed by adding in some resolvants and taking out the corresponding clauses.
include('Axioms/ANA001-0.ax')
$n_0 < x \;\Rightarrow\; n_0 < \mathrm{fp}_{31}(x)$ cnf(c_{10}, negated_conjecture)
$(n_0 < x$ and $|y + -a| < \mathrm{fp}_{31}(x)) \;\Rightarrow\; |f(y) + -l_1| < x$ cnf(c_{11}, negated_conjecture)
$n_0 < x \;\Rightarrow\; n_0 < \mathrm{fp}_{32}(x)$ cnf(c_{12}, negated_conjecture)
$(n_0 < x$ and $|y + -a| < \mathrm{fp}_{32}(x)) \;\Rightarrow\; |g(y) + -l_2| < x$ cnf(c_{13}, negated_conjecture)
$n_0 < b$ cnf(c_{14}, negated_conjecture)
$n_0 < x \;\Rightarrow\; |\mathrm{fp}_{33}(x) + -a| < x$ cnf(c_{15}, negated_conjecture)
$n_0 < x \;\Rightarrow\; \neg\, |f(\mathrm{fp}_{33}(x)) + -l_1| + |g(\mathrm{fp}_{33}(x)) + -l_2| < b$ cnf(c_{16}, negated_conjecture)

ANA003-2.p Lemma 1 for the sum of two continuous functions is continuous
A lemma formed by adding in some resolvants and taking out the corresponding clauses.
$x + n_0 = x$ cnf(right_identity, axiom)
$n_0 + x = x$ cnf(left_identity, axiom)
$\neg\, x < x$ cnf(reflexivity_of_less_than, axiom)
$(x < y$ and $y < z) \;\Rightarrow\; x < z$ cnf(transitivity_of_less_than, axiom)
$(n_0 < x$ and $n_0 < y) \;\Rightarrow\; n_0 < \min(x,y)$ cnf(axiom_2$_1$, axiom)
$(n_0 < x$ and $n_0 < y) \;\Rightarrow\; \min(x,y) < x$ cnf(axiom_2$_2$, axiom)
$(n_0 < x$ and $n_0 < y) \;\Rightarrow\; \min(x,y) < y$ cnf(axiom_2$_3$, axiom)
$(x < \mathrm{half}(\mathrm{xa})$ and $y < \mathrm{half}(\mathrm{xa})) \;\Rightarrow\; x + y < \mathrm{xa}$ cnf(axiom$_3$, axiom)
$|x| + |y| < \mathrm{xa} \;\Rightarrow\; |x + y| < \mathrm{xa}$ cnf(c_{17}, axiom)
$n_0 < \mathrm{xa} \;\Rightarrow\; n_0 < \mathrm{half}(\mathrm{xa})$ cnf(axiom$_7$, axiom)
$n_0 < x \;\Rightarrow\; n_0 < \mathrm{fp}_{31}(x)$ cnf(c_{10}, negated_conjecture)
$(n_0 < x$ and $|y + -a| < \mathrm{fp}_{31}(x)) \;\Rightarrow\; |f(y) + -l_1| < x$ cnf(c_{11}, negated_conjecture)
$n_0 < x \;\Rightarrow\; n_0 < \mathrm{fp}_{32}(x)$ cnf(c_{12}, negated_conjecture)

$(n_0 < x \text{ and } |y + -a| < \text{fp}_{32}(x)) \Rightarrow |g(y) + -l_2| < x$ cnf(c_{13}, negated_conjecture)
$n_0 < b$ cnf(c_{14}, negated_conjecture)
$n_0 < x \Rightarrow |\text{fp}_{33}(x) + -a| < x$ cnf(c_{15}, negated_conjecture)
$n_0 < x \Rightarrow \neg |f(\text{fp}_{33}(x)) + -l_1| + |g(\text{fp}_{33}(x)) + -l_2| < b$ cnf(c_{16}, negated_conjecture)

ANA003-3.p Lemma 1 for the sum of two continuous functions is continuous
A lemma formed by adding in some resolvants and taking out the corresponding clauses.
include('Axioms/ANA002-0.ax')
$\text{delta}_1(\varepsilon) \leq n_0 \Rightarrow \varepsilon \leq n_0$ cnf(clause$_1$, hypothesis)
$\text{delta}_2(\varepsilon) \leq n_0 \Rightarrow \varepsilon \leq n_0$ cnf(clause$_2$, hypothesis)
$|z + -\text{a\_real\_number}| \leq \text{delta}_1(\varepsilon) \Rightarrow (\varepsilon \leq n_0 \text{ or } |f(z) + -f(\text{a\_real\_number})| \leq \varepsilon)$ cnf(clause$_3$, hypothesis)
$|z + -\text{a\_real\_number}| \leq \text{delta}_2(\varepsilon) \Rightarrow (\varepsilon \leq n_0 \text{ or } |g(z) + -g(\text{a\_real\_number})| \leq \varepsilon)$ cnf(clause$_4$, hypothesis)
$\neg \text{epsilon}_0 \leq n_0$ cnf(clause$_5$, hypothesis)
$\delta \leq n_0 \text{ or } |\text{xs}(\delta) + -\text{a\_real\_number}| \leq \delta$ cnf(clause$_6$, hypothesis)
$|f(\text{xs}(\delta))+-f(\text{a\_real\_number})|+|g(\text{xs}(\delta))+-g(\text{a\_real\_number})| \leq \text{epsilon}_0 \Rightarrow \delta \leq n_0$ cnf(clause_7$_2$, negated_conjecture)

ANA003-4.p Lemma 1 for the sum of two continuous functions is continuous
A lemma formed by adding in some resolvants and taking out the corresponding clauses.
$z \leq \min(x, y) \Rightarrow z \leq x$ cnf(minimum$_3$, axiom)
$z \leq \min(x, y) \Rightarrow z \leq y$ cnf(minimum$_7$, axiom)
$\min(x, y) \leq n_0 \Rightarrow (x \leq n_0 \text{ or } y \leq n_0)$ cnf(minimum$_9$, axiom)
$(x \leq \text{half}(z) \text{ and } y \leq \text{half}(z)) \Rightarrow x + y \leq z$ cnf(less_or_equal_sum_of_halves, axiom)
$\text{half}(x) \leq n_0 \Rightarrow x \leq n_0$ cnf(zero_and_half, axiom)
$\text{delta}_1(\varepsilon) \leq n_0 \Rightarrow \varepsilon \leq n_0$ cnf(clause$_1$, hypothesis)
$\text{delta}_2(\varepsilon) \leq n_0 \Rightarrow \varepsilon \leq n_0$ cnf(clause$_2$, hypothesis)
$|z + -\text{a\_real\_number}| \leq \text{delta}_1(\varepsilon) \Rightarrow (\varepsilon \leq n_0 \text{ or } |f(z) + -f(\text{a\_real\_number})| \leq \varepsilon)$ cnf(clause$_3$, hypothesis)
$|z + -\text{a\_real\_number}| \leq \text{delta}_2(\varepsilon) \Rightarrow (\varepsilon \leq n_0 \text{ or } |g(z) + -g(\text{a\_real\_number})| \leq \varepsilon)$ cnf(clause$_4$, hypothesis)
$\neg \text{epsilon}_0 \leq n_0$ cnf(clause$_5$, hypothesis)
$\delta \leq n_0 \text{ or } |\text{xs}(\delta) + -\text{a\_real\_number}| \leq \delta$ cnf(clause$_6$, hypothesis)
$|f(\text{xs}(\delta))+-f(\text{a\_real\_number})|+|g(\text{xs}(\delta))+-g(\text{a\_real\_number})| \leq \text{epsilon}_0 \Rightarrow \delta \leq n_0$ cnf(clause_7$_2$, negated_conjecture)

ANA004-1.p Lemma 2 for the sum of two continuous functions is continuous
A lemma formed by adding in some resolvants and taking out the corresponding clauses.
include('Axioms/ANA001-0.ax')
$n_0 < x \Rightarrow n_0 < \text{fp}_{31}(x)$ cnf(c_{10}, negated_conjecture)
$(n_0 < x \text{ and } |y + -a| < \text{fp}_{31}(x)) \Rightarrow |f(y) + -l_1| < x$ cnf(c_{11}, negated_conjecture)
$n_0 < x \Rightarrow n_0 < \text{fp}_{32}(x)$ cnf(c_{12}, negated_conjecture)
$(n_0 < x \text{ and } |y + -a| < \text{fp}_{32}(x)) \Rightarrow |g(y) + -l_2| < x$ cnf(c_{13}, negated_conjecture)
$n_0 < b$ cnf(c_{14}, negated_conjecture)
$n_0 < x \Rightarrow |\text{fp}_{33}(x) + -a| < x$ cnf(c_{15}, negated_conjecture)
$n_0 < x \Rightarrow \neg |(f(\text{fp}_{33}(x)) + -l_1) + (g(\text{fp}_{33}(x)) + -l_2)| < b$ cnf(c_{16}, negated_conjecture)

ANA004-2.p Lemma 2 for the sum of two continuous functions is continuous
A lemma formed by adding in some resolvants and taking out the corresponding clauses.
$x + n_0 = x$ cnf(right_identity, axiom)
$n_0 + x = x$ cnf(left_identity, axiom)
$\neg x < x$ cnf(reflexivity_of_less_than, axiom)
$(x < y \text{ and } y < z) \Rightarrow x < z$ cnf(transitivity_of_less_than, axiom)
$(n_0 < x \text{ and } n_0 < y) \Rightarrow n_0 < \min(x, y)$ cnf(axiom_2$_1$, axiom)
$(n_0 < x \text{ and } n_0 < y) \Rightarrow \min(x, y) < x$ cnf(axiom_2$_2$, axiom)
$(n_0 < x \text{ and } n_0 < y) \Rightarrow \min(x, y) < y$ cnf(axiom_2$_3$, axiom)
$(x < \text{half}(\text{xa}) \text{ and } y < \text{half}(\text{xa})) \Rightarrow x + y < \text{xa}$ cnf(axiom$_3$, axiom)
$n_0 < \text{xa} \Rightarrow n_0 < \text{half}(\text{xa})$ cnf(axiom$_7$, axiom)
$n_0 < x \Rightarrow n_0 < \text{fp}_{31}(x)$ cnf(c_{10}, negated_conjecture)
$(n_0 < x \text{ and } |y + -a| < \text{fp}_{31}(x)) \Rightarrow |f(y) + -l_1| < x$ cnf(c_{11}, negated_conjecture)
$n_0 < x \Rightarrow n_0 < \text{fp}_{32}(x)$ cnf(c_{12}, negated_conjecture)
$(n_0 < x \text{ and } |y + -a| < \text{fp}_{32}(x)) \Rightarrow |g(y) + -l_2| < x$ cnf(c_{13}, negated_conjecture)
$n_0 < b$ cnf(c_{14}, negated_conjecture)
$n_0 < x \Rightarrow |\text{fp}_{33}(x) + -a| < x$ cnf(c_{15}, negated_conjecture)
$n_0 < x \Rightarrow \neg |(f(\text{fp}_{33}(x)) + -l_1) + (g(\text{fp}_{33}(x)) + -l_2)| < b$ cnf(c_{16}, negated_conjecture)

ANA004-3.p Lemma 2 for the sum of two continuous functions is continuous

A lemma formed by adding in some resolvants and taking out the corresponding clauses.
include('Axioms/ANA002-0.ax')
$\text{delta}_1(\varepsilon) \leq n_0 \;\Rightarrow\; \varepsilon \leq n_0$ cnf(clause_1, hypothesis)
$\text{delta}_2(\varepsilon) \leq n_0 \;\Rightarrow\; \varepsilon \leq n_0$ cnf(clause_2, hypothesis)
$|z + -\text{a\_real\_number}| \leq \text{delta}_1(\varepsilon) \;\Rightarrow\; (\varepsilon \leq n_0 \text{ or } |f(z) + -f(\text{a\_real\_number})| \leq \varepsilon)$ cnf(clause_3, hypothesis)
$|z + -\text{a\_real\_number}| \leq \text{delta}_2(\varepsilon) \;\Rightarrow\; (\varepsilon \leq n_0 \text{ or } |g(z) + -g(\text{a\_real\_number})| \leq \varepsilon)$ cnf(clause_4, hypothesis)
$\neg\, \text{epsilon}_0 \leq n_0$ cnf(clause_5, hypothesis)
$\delta \leq n_0 \text{ or } |\text{xs}(\delta) + -\text{a\_real\_number}| \leq \delta$ cnf(clause_6, hypothesis)
$|(f(\text{xs}(\delta)) + -f(\text{a\_real\_number})) + (g(\text{xs}(\delta)) + -g(\text{a\_real\_number}))| \leq \text{epsilon}_0 \;\Rightarrow\; \delta \leq n_0$ cnf(clause_7_1, negated_conjecture)

ANA004-4.p Lemma 2 for the sum of two continuous functions is continuous
A lemma formed by adding in some resolvants and taking out the corresponding clauses.
$|x| + |y| \leq z \;\Rightarrow\; |x + y| \leq z$ cnf($\text{absolute\_sum\_less\_or\_equal\_sum\_of\_absolutes}_2$, axiom)
$z \leq \min(x, y) \;\Rightarrow\; z \leq x$ cnf(minimum_3, axiom)
$z \leq \min(x, y) \;\Rightarrow\; z \leq y$ cnf(minimum_7, axiom)
$\min(x, y) \leq n_0 \;\Rightarrow\; (x \leq n_0 \text{ or } y \leq n_0)$ cnf(minimum_9, axiom)
$(x \leq \text{half}(z) \text{ and } y \leq \text{half}(z)) \;\Rightarrow\; x + y \leq z$ cnf(less_or_equal_sum_of_halves, axiom)
$\text{half}(x) \leq n_0 \;\Rightarrow\; x \leq n_0$ cnf(zero_and_half, axiom)
$\text{delta}_1(\varepsilon) \leq n_0 \;\Rightarrow\; \varepsilon \leq n_0$ cnf(clause_1, hypothesis)
$\text{delta}_2(\varepsilon) \leq n_0 \;\Rightarrow\; \varepsilon \leq n_0$ cnf(clause_2, hypothesis)
$|z + -\text{a\_real\_number}| \leq \text{delta}_1(\varepsilon) \;\Rightarrow\; (\varepsilon \leq n_0 \text{ or } |f(z) + -f(\text{a\_real\_number})| \leq \varepsilon)$ cnf(clause_3, hypothesis)
$|z + -\text{a\_real\_number}| \leq \text{delta}_2(\varepsilon) \;\Rightarrow\; (\varepsilon \leq n_0 \text{ or } |g(z) + -g(\text{a\_real\_number})| \leq \varepsilon)$ cnf(clause_4, hypothesis)
$\neg\, \text{epsilon}_0 \leq n_0$ cnf(clause_5, hypothesis)
$\delta \leq n_0 \text{ or } |\text{xs}(\delta) + -\text{a\_real\_number}| \leq \delta$ cnf(clause_6, hypothesis)
$|(f(\text{xs}(\delta)) + -f(\text{a\_real\_number})) + (g(\text{xs}(\delta)) + -g(\text{a\_real\_number}))| \leq \text{epsilon}_0 \;\Rightarrow\; \delta \leq n_0$ cnf(clause_7_1, negated_conjecture)

ANA004-5.p Lemma 2 for the sum of two continuous functions is continuous
A lemma formed by adding in some resolvants and taking out the corresponding clauses.
$|x + y| \leq |x| + |y|$ cnf($\text{absolute\_sum\_less\_or\_equal\_sum\_of\_absolutes}_1$, axiom)
$\min(x, y) \leq x$ cnf(minimum_2, axiom)
$x \leq y \;\Rightarrow\; x \leq \min(x, y)$ cnf(minimum_4, axiom)
$\min(x, y) \leq y$ cnf(minimum_6, axiom)
$y \leq x \;\Rightarrow\; y \leq \min(x, y)$ cnf(minimum_8, axiom)
$(x \leq \text{half}(z) \text{ and } y \leq \text{half}(z)) \;\Rightarrow\; x + y \leq z$ cnf(less_or_equal_sum_of_halves, axiom)
$\text{half}(x) \leq n_0 \;\Rightarrow\; x \leq n_0$ cnf(zero_and_half, axiom)
$x \leq y \text{ or } y \leq x$ cnf(commutativity_of_less_or_equal, axiom)
$(x \leq y \text{ and } y \leq z) \;\Rightarrow\; x \leq z$ cnf(transitivity_of_less_or_equal, axiom)
$\text{delta}_1(\varepsilon) \leq n_0 \;\Rightarrow\; \varepsilon \leq n_0$ cnf(clause_1, hypothesis)
$\text{delta}_2(\varepsilon) \leq n_0 \;\Rightarrow\; \varepsilon \leq n_0$ cnf(clause_2, hypothesis)
$|z + -\text{a\_real\_number}| \leq \text{delta}_1(\varepsilon) \;\Rightarrow\; (\varepsilon \leq n_0 \text{ or } |f(z) + -f(\text{a\_real\_number})| \leq \varepsilon)$ cnf(clause_3, hypothesis)
$|z + -\text{a\_real\_number}| \leq \text{delta}_2(\varepsilon) \;\Rightarrow\; (\varepsilon \leq n_0 \text{ or } |g(z) + -g(\text{a\_real\_number})| \leq \varepsilon)$ cnf(clause_4, hypothesis)
$\neg\, \text{epsilon}_0 \leq n_0$ cnf(clause_5, hypothesis)
$\delta \leq n_0 \text{ or } |\text{xs}(\delta) + -\text{a\_real\_number}| \leq \delta$ cnf(clause_6, hypothesis)
$|(f(\text{xs}(\delta)) + -f(\text{a\_real\_number})) + (g(\text{xs}(\delta)) + -g(\text{a\_real\_number}))| \leq \text{epsilon}_0 \;\Rightarrow\; \delta \leq n_0$ cnf(clause_7_1, negated_conjecture)

ANA005-1.p The sum of two continuous functions is continuous
include('Axioms/ANA001-0.ax')
$n_0 < x \;\Rightarrow\; n_0 < \text{fp}_{31}(x)$ cnf(c_{10}, negated_conjecture)
$(n_0 < x \text{ and } |y + -a| < \text{fp}_{31}(x)) \;\Rightarrow\; |f(y) + -l_1| < x$ cnf(c_{11}, negated_conjecture)
$n_0 < x \;\Rightarrow\; n_0 < \text{fp}_{32}(x)$ cnf(c_{12}, negated_conjecture)
$(n_0 < x \text{ and } |y + -a| < \text{fp}_{32}(x)) \;\Rightarrow\; |g(y) + -l_2| < x$ cnf(c_{13}, negated_conjecture)
$n_0 < b$ cnf(c_{14}, negated_conjecture)
$n_0 < x \;\Rightarrow\; |\text{fp}_{33}(x) + -a| < x$ cnf(c_{15}, negated_conjecture)
$n_0 < x \;\Rightarrow\; \neg\, |(f(\text{fp}_{33}(x)) + g(\text{fp}_{33}(x))) + -(l_1 + l_2)| < b$ cnf(c_{16}, negated_conjecture)

ANA005-2.p The sum of two continuous functions is continuous
$x + n_0 = x$ cnf(right_identity, axiom)
$n_0 + x = x$ cnf(left_identity, axiom)
$\neg\, x < x$ cnf(reflexivity_of_less_than, axiom)
$(x < y \text{ and } y < z) \;\Rightarrow\; x < z$ cnf(transitivity_of_less_than, axiom)
$(n_0 < x \text{ and } n_0 < y) \;\Rightarrow\; n_0 < \min(x, y)$ cnf(axiom_2_1, axiom)

$(n_0 < x$ and $n_0 < y) \Rightarrow \min(x, y) < x$ cnf(axiom_2$_2$, axiom)
$(n_0 < x$ and $n_0 < y) \Rightarrow \min(x, y) < y$ cnf(axiom_2$_3$, axiom)
$(x <$ half(xa) and $y <$ half(xa)$) \Rightarrow x + y <$ xa   cnf(axiom$_3$, axiom)
$n_0 <$ xa $\Rightarrow n_0 <$ half(xa)   cnf(axiom$_7$, axiom)
$n_0 < x \Rightarrow n_0 < \mathrm{fp}_{31}(x)$ cnf(c_{10}, negated_conjecture)
$(n_0 < x$ and $|y + -a| < \mathrm{fp}_{31}(x)) \Rightarrow |f(y) + -l_1| < x$ cnf(c_{11}, negated_conjecture)
$n_0 < x \Rightarrow n_0 < \mathrm{fp}_{32}(x)$ cnf(c_{12}, negated_conjecture)
$(n_0 < x$ and $|y + -a| < \mathrm{fp}_{32}(x)) \Rightarrow |g(y) + -l_2| < x$ cnf(c_{13}, negated_conjecture)
$n_0 < b$ cnf(c_{14}, negated_conjecture)
$n_0 < x \Rightarrow |\mathrm{fp}_{33}(x) + -a| < x$ cnf(c_{15}, negated_conjecture)
$n_0 < x \Rightarrow \neg |(f(\mathrm{fp}_{33}(x)) + g(\mathrm{fp}_{33}(x))) + -(l_1 + l_2)| < b$ cnf(c_{16}, negated_conjecture)

ANA005-3.p The sum of two continuous functions is continuous
A lemma formed by adding in some resolvants and taking out the corresponding clauses.
include('Axioms/ANA002-0.ax')
delta$_1(\varepsilon) \leq n_0 \Rightarrow \varepsilon \leq n_0$ cnf(clause$_1$, hypothesis)
delta$_2(\varepsilon) \leq n_0 \Rightarrow \varepsilon \leq n_0$ cnf(clause$_2$, hypothesis)
$|z + -$a_real_number$| \leq$ delta$_1(\varepsilon) \Rightarrow (\varepsilon \leq n_0$ or $|f(z) + -f($a_real_number$)| \leq \varepsilon)$ cnf(clause$_3$, hypothesis)
$|z + -$a_real_number$| \leq$ delta$_2(\varepsilon) \Rightarrow (\varepsilon \leq n_0$ or $|g(z) + -g($a_real_number$)| \leq \varepsilon)$ cnf(clause$_4$, hypothesis)
$\neg$ epsilon$_0 \leq n_0$ cnf(clause$_5$, hypothesis)
$\delta \leq n_0$ or $|\mathrm{xs}(\delta) + -$a_real_number$| \leq \delta$ cnf(clause$_6$, hypothesis)
$|(f(\mathrm{xs}(\delta))+g(\mathrm{xs}(\delta)))+(-f(a_real_number)+-g(a_real_number))| \leq$ epsilon$_0 \Rightarrow \delta \leq n_0$ cnf(clause$_7$, negated_conjecture)

ANA005-4.p The sum of two continuous functions is continuous
A lemma formed by adding in some resolvants and taking out the corresponding clauses.
less_or_equalish($|x + y|, |x| + |y|$)   cnf(absolute_sum_less_or_equal_sum_of_absolutes$_1$, axiom)
less_or_equalish($\min(x, y), x$)   cnf(minimum$_2$, axiom)
less_or_equalish(x, y) $\Rightarrow$ less_or_equalish($x, \min(x, y)$)   cnf(minimum$_4$, axiom)
less_or_equalish($\min(x, y), y$)   cnf(minimum$_6$, axiom)
less_or_equalish(y, x) $\Rightarrow$ less_or_equalish($y, \min(x, y)$)   cnf(minimum$_8$, axiom)
(less_or_equalish(x, half(z)) and less_or_equalish(y, half(z))) $\Rightarrow$ less_or_equalish($x{+}y, z$)   cnf(less_or_equal_sum_of_halves, a
less_or_equalish(half(x), n_0) $\Rightarrow$ less_or_equalish(x, n_0)   cnf(zero_and_half, axiom)
less_or_equalish(x, y) or less_or_equalish(y, x)   cnf(commutativity_of_less_or_equal, axiom)
(less_or_equalish(x, y) and less_or_equalish(y, z)) $\Rightarrow$ less_or_equalish(x, z)   cnf(transitivity_of_less_or_equal, axiom)
$x + y{=}y + x$ cnf(commutativity_of_add, axiom)
$(x + y) + z{=}x + (y + z)$ cnf(associativity_of_add, axiom)
$x{=}y \Rightarrow y{=}x$ cnf(symmetry, axiom)
$(x{=}y$ and $y{=}z) \Rightarrow x{=}z$ cnf(transitivity, axiom)
($x{=}z$ and less_or_equalish(x, y)) $\Rightarrow$ less_or_equalish(z, y)   cnf(less_or_equal_substitution$_1$, axiom)
$x{=}z \Rightarrow |x|{=}|z|$ cnf(absolute_substitution, axiom)
$x{=}z \Rightarrow x + y{=}z + y$ cnf(add_substitution$_1$, axiom)
$y{=}z \Rightarrow x + y{=}x + z$ cnf(add_substitution$_2$, axiom)
less_or_equalish(delta$_1(\varepsilon), n_0$) $\Rightarrow$ less_or_equalish(ε, n_0)   cnf(clause$_1$, hypothesis)
less_or_equalish(delta$_2(\varepsilon), n_0$) $\Rightarrow$ less_or_equalish(ε, n_0)   cnf(clause$_2$, hypothesis)
less_or_equalish($|z{+}{-}$a_real_number$|$, delta$_1(\varepsilon)$) $\Rightarrow$ (less_or_equalish(ε, n_0) or less_or_equalish($|f(z){+}{-}f($a_real_number$)|, \varepsilon$))
less_or_equalish($|z{+}{-}$a_real_number$|$, delta$_2(\varepsilon)$) $\Rightarrow$ (less_or_equalish(ε, n_0) or less_or_equalish($|g(z){+}{-}g($a_real_number$)|, \varepsilon$))
$\neg$ less_or_equalish(epsilon$_0, n_0$)   cnf(clause$_5$, hypothesis)
less_or_equalish(δ, n_0) or less_or_equalish($|\mathrm{xs}(\delta) + -$a_real_number$|, \delta$)   cnf(clause$_6$, hypothesis)
less_or_equalish($|(f(\mathrm{xs}(\delta))+g(\mathrm{xs}(\delta)))+(-f(a_real_number)+-g(a_real_number))|$, epsilon$_0$) $\Rightarrow$ less_or_equalish(δ, n_0)   cnf(

ANA005-5.p The sum of two continuous functions is continuous
less_or_equalish($|x + y|, |x| + |y|$)   cnf(absolute_sum_less_or_equal_sum_of_absolutes$_1$, axiom)
less_or_equalish(x, y) $\Rightarrow \min(x, y){=}x$ cnf(minimum$_1$, axiom)
less_or_equalish(y, x) $\Rightarrow \min(x, y){=}y$ cnf(minimum$_5$, axiom)
half(x) + half(x)$=x$ cnf(half_plus_half_is_whole, axiom)
less_or_equalish(half(x), n_0) $\Rightarrow$ less_or_equalish(x, n_0)   cnf(zero_and_half, axiom)
less_or_equalish(x, y) $\Rightarrow$ less_or_equalish($x + z, y + z$)   cnf(add_to_both_sides_of_less_equal$_1$, axiom)
less_or_equalish(x, y) or less_or_equalish(y, x)   cnf(commutativity_of_less_or_equal, axiom)
(less_or_equalish(x, y) and less_or_equalish(y, z)) $\Rightarrow$ less_or_equalish(x, z)   cnf(transitivity_of_less_or_equal, axiom)
$x + y{=}y + x$ cnf(commutativity_of_add, axiom)
$(x + y) + z{=}x + (y + z)$ cnf(associativity_of_add, axiom)

$x{=}y \Rightarrow$ less_or_equalish(x, y) cnf(equal_implies_less_or_equal, axiom)
$x{=}y \Rightarrow y{=}x$ cnf(symmetry, axiom)
$(x{=}y$ and $y{=}z) \Rightarrow x{=}z$ cnf(transitivity, axiom)
$(x{=}z$ and less_or_equalish$(x, y)) \Rightarrow$ less_or_equalish(z, y) cnf(less_or_equal_substitution$_1$, axiom)
$x{=}z \Rightarrow |x|{=}|z|$ cnf(absolute_substitution, axiom)
$x{=}z \Rightarrow x + y{=}z + y$ cnf(add_substitution$_1$, axiom)
$y{=}z \Rightarrow x + y{=}x + z$ cnf(add_substitution$_2$, axiom)
less_or_equalish(delta$_1(\varepsilon), n_0) \Rightarrow$ less_or_equalish(ε, n_0) cnf(clause$_1$, hypothesis)
less_or_equalish(delta$_2(\varepsilon), n_0) \Rightarrow$ less_or_equalish(ε, n_0) cnf(clause$_2$, hypothesis)
less_or_equalish($|z{+}{-}$a_real_number$|$, delta$_1(\varepsilon)) \Rightarrow$ (less_or_equalish(ε, n_0) or less_or_equalish($|f(z){+}{-}f($a_real_number$)|, \varepsilon$))
less_or_equalish($|z{+}{-}$a_real_number$|$, delta$_2(\varepsilon)) \Rightarrow$ (less_or_equalish(ε, n_0) or less_or_equalish($|g(z){+}{-}g($a_real_number$)|, \varepsilon$))
$\neg$ less_or_equalish(epsilon$_0, n_0$) cnf(clause$_5$, hypothesis)
less_or_equalish(δ, n_0) or less_or_equalish($|$xs$(\delta) + -$a_real_number$|, \delta$) cnf(clause$_6$, hypothesis)
less_or_equalish($|(f($xs$(\delta)){+}g($xs$(\delta))){+}({-}f($a_real_number$){+}{-}g($a_real_number$))|$, epsilon$_0$) $\Rightarrow$ less_or_equalish(δ, n_0) cnf(

ANA006-1.p Analysis (limits) axioms for continuous functions
include('Axioms/ANA001-0.ax')

ANA006-2.p Analysis (limits) axioms for continuous functions
include('Axioms/ANA002-0.ax')

ANA007-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Ocomm__monoid__mult(t_a) $\Rightarrow$ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y cnf(cls_Sets
class_OrderedGroup_Ocomm__monoid__add(t_a) $\Rightarrow$ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y cnf(cls_SetsAn
$\neg$ c_lessequals(c_HOL_Oabs(v_f(v_x(v_U)), t_b), c_times(v_U, c_HOL_Oabs(v_f(v_x(v_U)), t_b), t_b), t_b) cnf(cls_conjecture$_0$
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)

ANA007-2.p Problem about Big-O notation
$\neg$ c_lessequals(c_HOL_Oabs(v_f(v_x(v_U)), t_b), c_times(v_U, c_HOL_Oabs(v_f(v_x(v_U)), t_b), t_b), t_b) cnf(cls_conjecture$_0$
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)
class_Orderings_Oorder(t_a) $\Rightarrow$ c_lessequals(v_x, v_x, t_a) cnf(cls_Orderings_Oorder__class_Oaxioms__1$_0$, axiom)
class_Ring__and__Field_Oordered__idom(t_a) $\Rightarrow$ v_c = c_times(c_1, v_c, t_a) cnf(cls_Ring__and__Field_Omult__cancel__right1
class_Ring__and__Field_Oordered__idom$(t) \Rightarrow$ class_Orderings_Oorder(t) cnf(clsrel_Ring__and__Field_Oordered__idom$_{44}$, ax

ANA009-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Ocomm__monoid__mult(t_a) $\Rightarrow$ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y cnf(cls_Sets
class_OrderedGroup_Ocomm__monoid__add(t_a) $\Rightarrow$ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y cnf(cls_SetsAn
c_lessequals(v_lb(v_U), v_f(v_U), t_b) cnf(cls_conjecture$_0$, negated_conjecture)
c_lessequals(v_f(v_U), c_plus(v_lb(v_U), v_g(v_U), t_b), t_b) cnf(cls_conjecture$_1$, negated_conjecture)
$\neg$ c_lessequals(c_0, c_plus(v_f(v_x), c_uminus(v_lb(v_x), t_b), t_b), t_b) cnf(cls_conjecture$_2$, negated_conjecture)
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)

ANA009-2.p Problem about Big-O notation
(class_OrderedGroup_Opordered__ab__semigroup__add__imp__le(t_a) and c_lessequals(v_a, v_b, t_a)) $\Rightarrow$ c_lessequals(c_plus(v_a
class_OrderedGroup_Oab__group__add(t_a) $\Rightarrow$ c_plus(v_a, c_uminus(v_a, t_a), t_a) = c_0 cnf(cls_OrderedGroup_Oright__mi
c_lessequals(v_lb(v_U), v_f(v_U), t_b) cnf(cls_conjecture$_0$, negated_conjecture)
$\neg$ c_lessequals(c_0, c_plus(v_f(v_x), c_uminus(v_lb(v_x), t_b), t_b), t_b) cnf(cls_conjecture$_2$, negated_conjecture)
class_Ring__and__Field_Oordered__idom$(t) \Rightarrow$ class_OrderedGroup_Opordered__ab__semigroup__add__imp__le(t) cnf(clsrel_
class_Ring__and__Field_Oordered__idom$(t) \Rightarrow$ class_OrderedGroup_Oab__group__add(t) cnf(clsrel_Ring__and__Field_Oorde
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)

ANA010-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
(class_Orderings_Oorder(t_a) and c_lessequals(v_y, v_z, t_a) and c_lessequals(v_x, v_y, t_a)) $\Rightarrow$ c_lessequals(v_x, v_z, t_a) cn
class_Ring__and__Field_Oordered__idom(t_a) $\Rightarrow$ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H

class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y   cnf(cls_SetsA
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y   cnf(cls_SetsAn
c_lessequals(c_0, v_f(v_U), t_b)   cnf(cls_conjecture$_0$, negated_conjecture)
c_lessequals(v_f(v_U), c_times(v_c, v_g(v_U), t_b), t_b)   cnf(cls_conjecture$_1$, negated_conjecture)
¬ c_lessequals(v_f(v_x(v_U)), c_times(v_U, c_HOL_Oabs(v_g(v_x(v_U)), t_b), t_b), t_b)   cnf(cls_conjecture$_2$, negated_conjectu
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)

ANA010-2.p Problem about Big-O notation
(class_OrderedGroup_Olordered__ab__group__abs(t_a) and c_lessequals(c_0, v_y, t_a)) ⇒ c_HOL_Oabs(v_y, t_a) = v_y   cnf(c
(class_Orderings_Oorder(t_a) and c_lessequals(v_y, v_z, t_a) and c_lessequals(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_z, t_a)   cn
class_Ring__and__Field_Oordered__idom(t_a) ⇒ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
c_lessequals(c_0, v_f(v_U), t_b)   cnf(cls_conjecture$_0$, negated_conjecture)
c_lessequals(v_f(v_U), c_times(v_c, v_g(v_U), t_b), t_b)   cnf(cls_conjecture$_1$, negated_conjecture)
¬ c_lessequals(v_f(v_x(v_U)), c_times(v_U, c_HOL_Oabs(v_g(v_x(v_U)), t_b), t_b), t_b)   cnf(cls_conjecture$_2$, negated_conjectu
class_OrderedGroup_Olordered__ab__group__abs(t) ⇒ class_Orderings_Oorder(t)   cnf(clsrel_OrderedGroup_Olordered__ab_
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Olordered__ab__group__abs(t)   cnf(clsrel_Ring__and__Fi
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)

ANA012-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_Ring__and__Field_Oordered__idom(t_a) ⇒ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y   cnf(cls_SetsA
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y   cnf(cls_SetsAn
v_c $\neq c_0$ cnf(cls_conjecture$_0$, negated_conjecture)
¬ c_lessequals(c_1, c_times(v_U, c_HOL_Oabs(v_c, t_a), t_a), t_a)   cnf(cls_conjecture$_1$, negated_conjecture)
class_Ring__and__Field_Oordered__field(t_a)   cnf(tfree_tcs, negated_conjecture)

ANA012-2.p Problem about Big-O notation
v_c $\neq c_0$ cnf(cls_conjecture$_0$, negated_conjecture)
¬ c_lessequals(c_1, c_times(v_U, c_HOL_Oabs(v_c, t_a), t_a), t_a)   cnf(cls_conjecture$_1$, negated_conjecture)
class_Ring__and__Field_Oordered__field(t_a)   cnf(tfree_tcs, negated_conjecture)
(class_OrderedGroup_Olordered__ab__group__abs(t_a) and c_HOL_Oabs(v_a, t_a) = c_0) ⇒ v_a = c_0 cnf(cls_OrderedGroup
class_Orderings_Oorder(t_a) ⇒ c_lessequals(v_x, v_x, t_a)   cnf(cls_Orderings_Oorder__class_Oaxioms__1$_0$, axiom)
class_Ring__and__Field_Ofield(t_a) ⇒ (v_a = c_0 or c_times(c_HOL_Oinverse(v_a, t_a), v_a, t_a) = c_1)   cnf(cls_Ring__and__F
class_Ring__and__Field_Oordered__field(t) ⇒ class_Ring__and__Field_Ofield(t)   cnf(clsrel_Ring__and__Field_Oordered__field
class_Ring__and__Field_Oordered__field(t) ⇒ class_OrderedGroup_Olordered__ab__group__abs(t)   cnf(clsrel_Ring__and__Fie
class_Ring__and__Field_Oordered__field(t) ⇒ class_Orderings_Oorder(t)   cnf(clsrel_Ring__and__Field_Oordered__field$_{58}$, axi

ANA013-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_Ring__and__Field_Oordered__idom(t_a) ⇒ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y   cnf(cls_SetsA
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y   cnf(cls_SetsAn
¬ c_lessequals(c_times(c_HOL_Oabs(v_c, t_b), c_HOL_Oabs(v_f(v_x(v_U)), t_b), t_b), c_times(v_U, c_HOL_Oabs(v_f(v_x(v_U)), t
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)

ANA013-2.p Problem about Big-O notation
¬ c_lessequals(c_times(c_HOL_Oabs(v_c, t_b), c_HOL_Oabs(v_f(v_x(v_U)), t_b), t_b), c_times(v_U, c_HOL_Oabs(v_f(v_x(v_U)), t
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)
class_Orderings_Oorder(t_a) ⇒ c_lessequals(v_x, v_x, t_a)   cnf(cls_Orderings_Oorder__class_Oaxioms__1$_0$, axiom)
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Orderings_Oorder(t)   cnf(clsrel_Ring__and__Field_Oordered__idom$_{44}$, ax

ANA014-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Osemigroup__mult(t_a) ⇒ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_Ring__and__Field_Oordered__idom(t_a) ⇒ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y   cnf(cls_SetsA

class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y   cnf(cls_SetsAn
v_c ≠ c_0 cnf(cls_conjecture$_0$, negated_conjecture)
¬ c_lessequals(c_HOL_Oabs(v_f(v_x(v_U)), t_a), c_times(v_U, c_times(c_HOL_Oabs(v_c, t_a), c_HOL_Oabs(v_f(v_x(v_U)), t_a), t_
class_Ring__and__Field_Oordered__field(t_a)   cnf(tfree_tcs, negated_conjecture)

ANA014-2.p Problem about Big-O notation
v_c ≠ c_0 cnf(cls_conjecture$_0$, negated_conjecture)
¬ c_lessequals(c_HOL_Oabs(v_f(v_x(v_U)), t_a), c_times(v_U, c_times(c_HOL_Oabs(v_c, t_a), c_HOL_Oabs(v_f(v_x(v_U)), t_a), t_
class_Ring__and__Field_Oordered__field(t_a)   cnf(tfree_tcs, negated_conjecture)
class_OrderedGroup_Omonoid__mult(t_a) ⇒ c_times(c_1, v_y, t_a) = v_y   cnf(cls_OrderedGroup_Omonoid__mult__class_Oax
class_OrderedGroup_Osemigroup__mult(t_a) ⇒ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_Orderings_Oorder(t_a) ⇒ c_lessequals(v_x, v_x, t_a)   cnf(cls_Orderings_Oorder__class_Oaxioms__1$_0$, axiom)
class_Ring__and__Field_Oordered__idom(t_a) ⇒ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
class_Ring__and__Field_Ofield(t_a) ⇒ (v_a = c_0 or c_times(c_HOL_Oinverse(v_a, t_a), v_a, t_a) = c_1)   cnf(cls_Ring__and__F
class_Ring__and__Field_Ofield(t) ⇒ class_OrderedGroup_Omonoid__mult(t)   cnf(clsrel_Ring__and__Field_Ofield$_{12}$, axiom)
class_Ring__and__Field_Ofield(t) ⇒ class_OrderedGroup_Osemigroup__mult(t)   cnf(clsrel_Ring__and__Field_Ofield$_{21}$, axiom
class_Ring__and__Field_Oordered__field(t) ⇒ class_Ring__and__Field_Ofield(t)   cnf(clsrel_Ring__and__Field_Oordered__field
class_Ring__and__Field_Oordered__field(t) ⇒ class_Ring__and__Field_Oordered__idom(t)   cnf(clsrel_Ring__and__Field_Oorde
class_Ring__and__Field_Oordered__field(t) ⇒ class_Orderings_Oorder(t)   cnf(clsrel_Ring__and__Field_Oordered__field$_{58}$, axi

ANA015-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Osemigroup__mult(t_a) ⇒ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_Ring__and__Field_Oordered__idom(t_a) ⇒ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y   cnf(cls_SetsA
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y   cnf(cls_SetsAn
v_c ≠ c_0 cnf(cls_conjecture$_0$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_g(v_U), t_a), c_times(v_d, c_HOL_Oabs(v_f(v_U), t_a), t_a), t_a)   cnf(cls_conjecture$_1$, negated_co
¬ c_lessequals(c_HOL_Oabs(c_times(c_HOL_Oinverse(v_c, t_a), v_g(v_x(v_U)), t_a), t_a), c_times(v_U, c_HOL_Oabs(v_f(v_x(v_U
class_Ring__and__Field_Oordered__field(t_a)   cnf(tfree_tcs, negated_conjecture)

ANA015-2.p Problem about Big-O notation
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_lessequals(c_0, c_HOL_Oabs(v_a, t_a), t_a)   cnf(cls_OrderedGroup
class_OrderedGroup_Osemigroup__mult(t_a) ⇒ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_Ring__and__Field_Oordered__idom(t_a) ⇒ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
c_lessequals(c_HOL_Oabs(v_g(v_U), t_a), c_times(v_d, c_HOL_Oabs(v_f(v_U), t_a), t_a), t_a)   cnf(cls_conjecture$_1$, negated_co
¬ c_lessequals(c_HOL_Oabs(c_times(c_HOL_Oinverse(v_c, t_a), v_g(v_x(v_U)), t_a), t_a), c_times(v_U, c_HOL_Oabs(v_f(v_x(v_U
class_Ring__and__Field_Ofield(t) ⇒ class_OrderedGroup_Osemigroup__mult(t)   cnf(clsrel_Ring__and__Field_Ofield$_{21}$, axiom
class_Ring__and__Field_Oordered__field(t) ⇒ class_Ring__and__Field_Ofield(t)   cnf(clsrel_Ring__and__Field_Oordered__field
class_Ring__and__Field_Oordered__field(t) ⇒ class_Ring__and__Field_Oordered__idom(t)   cnf(clsrel_Ring__and__Field_Oorde
class_Ring__and__Field_Oordered__field(t) ⇒ class_Ring__and__Field_Opordered__semiring(t)   cnf(clsrel_Ring__and__Field_O
class_Ring__and__Field_Oordered__field(t) ⇒ class_OrderedGroup_Olordered__ab__group__abs(t)   cnf(clsrel_Ring__and__Fie
class_Ring__and__Field_Oordered__field(t_a)   cnf(tfree_tcs, negated_conjecture)

ANA016-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Osemigroup__mult(t_a) ⇒ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_Ring__and__Field_Oordered__idom(t_a) ⇒ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y   cnf(cls_SetsA
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y   cnf(cls_SetsAn
v_c ≠ c_0 cnf(cls_conjecture$_0$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_g(v_U), t_a), c_times(v_d, c_HOL_Oabs(v_f(v_U), t_a), t_a), t_a)   cnf(cls_conjecture$_1$, negated_co
v_g(v_x) ≠ c_times(v_c, c_times(c_HOL_Oinverse(v_c, t_a), v_g(v_x), t_a), t_a)   cnf(cls_conjecture$_2$, negated_conjecture)
class_Ring__and__Field_Oordered__field(t_a)   cnf(tfree_tcs, negated_conjecture)

ANA016-2.p Problem about Big-O notation
v_c $\neq c_0$ cnf(cls_conjecture$_0$, negated_conjecture)
v_g(v_x) $\neq$ c_times(v_c, c_times(c_HOL_Oinverse(v_c, t_a), v_g(v_x), t_a), t_a) cnf(cls_conjecture$_2$, negated_conjecture)
class_Ring__and__Field_Oordered__field(t_a) cnf(tfree_tcs, negated_conjecture)
class_OrderedGroup_Omonoid__mult(t_a) $\Rightarrow$ c_times(c_1, v_y, t_a) = v_y cnf(cls_OrderedGroup_Omonoid__mult__class_Oax
class_OrderedGroup_Osemigroup__mult(t_a) $\Rightarrow$ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_Ring__and__Field_Ofield(t_a) $\Rightarrow$ (v_a = c_0 or c_times(v_a, c_HOL_Oinverse(v_a, t_a), t_a) = c_1) cnf(cls_Ring__and__Fi
class_Ring__and__Field_Ofield(t) $\Rightarrow$ class_OrderedGroup_Omonoid__mult(t) cnf(clsrel_Ring__and__Field_Ofield$_{12}$, axiom)
class_Ring__and__Field_Ofield(t) $\Rightarrow$ class_OrderedGroup_Osemigroup__mult(t) cnf(clsrel_Ring__and__Field_Ofield$_{21}$, axiom
class_Ring__and__Field_Oordered__field(t) $\Rightarrow$ class_Ring__and__Field_Ofield(t) cnf(clsrel_Ring__and__Field_Oordered__field

ANA017-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Osemigroup__mult(t_a) $\Rightarrow$ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_OrderedGroup_Oab__semigroup__mult(t_a) $\Rightarrow$ c_times(v_a, v_b, t_a) = c_times(v_b, v_a, t_a) cnf(cls_OrderedGroup_O
class_OrderedGroup_Oab__semigroup__mult(t_a) $\Rightarrow$ c_times(v_a, c_times(v_b, v_c, t_a), t_a) = c_times(v_b, c_times(v_a, v_c, t_a
class_Ring__and__Field_Oordered__idom(t_a) $\Rightarrow$ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) $\Rightarrow$ c_lessequals
class_OrderedGroup_Ocomm__monoid__mult(t_a) $\Rightarrow$ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y cnf(cls_SetsA
class_OrderedGroup_Ocomm__monoid__add(t_a) $\Rightarrow$ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y cnf(cls_SetsAn
c_lessequals(c_HOL_Oabs(v_b(v_U), t_b), c_times(v_ca, c_HOL_Oabs(v_f(v_U), t_b), t_b), t_b) cnf(cls_conjecture$_0$, negated_c
$\neg$ c_lessequals(c_HOL_Oabs(c_times(v_c, v_b(v_x(v_U)), t_b), t_b), c_times(v_U, c_HOL_Oabs(v_f(v_x(v_U)), t_b), t_b), t_b) c
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)

ANA017-2.p Problem about Big-O notation
c_lessequals(c_HOL_Oabs(v_b(v_U), t_b), c_times(v_ca, c_HOL_Oabs(v_f(v_U), t_b), t_b), t_b) cnf(cls_conjecture$_0$, negated_c
$\neg$ c_lessequals(c_HOL_Oabs(c_times(v_c, v_b(v_x(v_U)), t_b), t_b), c_times(v_U, c_HOL_Oabs(v_f(v_x(v_U)), t_b), t_b), t_b) c
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)
class_OrderedGroup_Olordered__ab__group__abs(t_a) $\Rightarrow$ c_lessequals(c_0, c_HOL_Oabs(v_a, t_a), t_a) cnf(cls_OrderedGroup
class_OrderedGroup_Osemigroup__mult(t_a) $\Rightarrow$ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_Ring__and__Field_Oordered__idom(t_a) $\Rightarrow$ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) $\Rightarrow$ c_lessequals
class_Ring__and__Field_Oordered__idom(t) $\Rightarrow$ class_OrderedGroup_Osemigroup__mult(t) cnf(clsrel_Ring__and__Field_Oord
class_Ring__and__Field_Oordered__idom(t) $\Rightarrow$ class_Ring__and__Field_Opordered__semiring(t) cnf(clsrel_Ring__and__Field_
class_Ring__and__Field_Oordered__idom(t) $\Rightarrow$ class_OrderedGroup_Olordered__ab__group__abs(t) cnf(clsrel_Ring__and__Fi

ANA018-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Osemigroup__mult(t_a) $\Rightarrow$ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_OrderedGroup_Oab__semigroup__mult(t_a) $\Rightarrow$ c_times(v_a, v_b, t_a) = c_times(v_b, v_a, t_a) cnf(cls_OrderedGroup_O
class_OrderedGroup_Oab__semigroup__mult(t_a) $\Rightarrow$ c_times(v_a, c_times(v_b, v_c, t_a), t_a) = c_times(v_b, c_times(v_a, v_c, t_a
(class_Orderings_Oorder(t_a) and c_lessequals(v_y, v_z, t_a) and c_lessequals(v_x, v_y, t_a)) $\Rightarrow$ c_lessequals(v_x, v_z, t_a) cn
(class_Orderings_Oorder(t_a) and c_less(v_x, v_y, t_a)) $\Rightarrow$ c_lessequals(v_x, v_y, t_a) cnf(cls_Orderings_Oorder__less__imp_
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) $\Rightarrow$ c_lessequals
class_OrderedGroup_Ocomm__monoid__mult(t_a) $\Rightarrow$ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y cnf(cls_SetsA
class_OrderedGroup_Ocomm__monoid__add(t_a) $\Rightarrow$ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y cnf(cls_SetsAn
c_less(c_0, v_c, t_b) cnf(cls_conjecture$_0$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_f(v_U), t_b), c_times(v_c, c_HOL_Oabs(v_g(v_U), t_b), t_b), t_b) cnf(cls_conjecture$_1$, negated_co
c_less(c_0, v_ca, t_b) cnf(cls_conjecture$_2$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_x(v_U), t_b), c_times(v_ca, c_HOL_Oabs(v_f(v_U), t_b), t_b), t_b) cnf(cls_conjecture$_3$, negated_c
$\neg$ c_lessequals(c_HOL_Oabs(v_x(v_xa), t_b), c_times(c_times(v_ca, v_c, t_b), c_HOL_Oabs(v_g(v_xa), t_b), t_b), t_b) cnf(cls_co
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)

ANA018-2.p Problem about Big-O notation
c_lessequals(c_HOL_Oabs(v_f(v_U), t_b), c_times(v_c, c_HOL_Oabs(v_g(v_U), t_b), t_b), t_b) cnf(cls_conjecture$_1$, negated_co
c_less(c_0, v_ca, t_b) cnf(cls_conjecture$_2$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_x(v_U), t_b), c_times(v_ca, c_HOL_Oabs(v_f(v_U), t_b), t_b), t_b) cnf(cls_conjecture$_3$, negated_c

¬ c_lessequals(c_HOL_Oabs(v_x(v_xa), t_b), c_times(c_times(v_ca, v_c, t_b), c_HOL_Oabs(v_g(v_xa), t_b), t_b), t_b) cnf(cls_c
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)
class_OrderedGroup_Osemigroup__mult(t_a) ⇒ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
(class_Orderings_Oorder(t_a) and c_lessequals(v_y, v_z, t_a) and c_lessequals(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_z, t_a) cr
(class_Orderings_Oorder(t_a) and c_less(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_y, t_a) cnf(cls_Orderings_Oorder__less__imp__
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
class_LOrder_Ojoin__semilorder(t) ⇒ class_Orderings_Oorder(t) cnf(clsrel_LOrder_Ojoin__semilorder$_1$, axiom)
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Osemigroup__mult(t) cnf(clsrel_Ring__and__Field_Oord
class_Ring__and__Field_Oordered__idom(t) ⇒ class_LOrder_Ojoin__semilorder(t) cnf(clsrel_Ring__and__Field_Oordered__id
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Ring__and__Field_Opordered__semiring(t) cnf(clsrel_Ring__and__Field_

ANA019-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
c_less(c_0, v_x, tc_nat) ⇒ v_x = c_Suc(c_minus(v_x, c_1, tc_nat)) cnf(cls_NatBin_OSuc__pred_H$_0$, axiom)
(class_Orderings_Oorder(t_a) and c_less(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_y, t_a) cnf(cls_Orderings_Oorder__less__imp__
(class_Ring__and__Field_Opordered__cancel__semiring(t_a) and c_lessequals(c_0, v_b, t_a) and c_lessequals(c_0, v_a, t_a)) ⇒
c_lessequals(c_0, c_times(v_a, v_b, t_a), t_a) cnf(cls_Ring__and__Field_Omult__nonneg__nonneg$_0$, axiom)
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y cnf(cls_Sets
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y cnf(cls_SetsAn
v_f(c_0) = c_0 cnf(cls_conjecture$_0$, negated_conjecture)
c_less(c_0, v_x, t_a) cnf(cls_conjecture$_1$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_f(c_Suc(v_U)), t_a), c_times(v_x, c_HOL_Oabs(v_h(c_Suc(v_U)), t_a), t_a), t_a) cnf(cls_conjectur
c_lessequals(c_HOL_Oabs(v_f(v_xa(v_U)), t_a), c_times(v_U, c_HOL_Oabs(v_h(v_xa(v_U)), t_a), t_a), t_a) ⇒ ¬ c_less(c_0, v_U, t_
class_Ring__and__Field_Oordered__idom(t_a) cnf(tfree_tcs, negated_conjecture)

ANA019-2.p Problem about Big-O notation
v_f(c_0) = c_0 cnf(cls_conjecture$_0$, negated_conjecture)
c_less(c_0, v_x, t_a) cnf(cls_conjecture$_1$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_f(c_Suc(v_U)), t_a), c_times(v_x, c_HOL_Oabs(v_h(c_Suc(v_U)), t_a), t_a), t_a) cnf(cls_conjectur
c_lessequals(c_HOL_Oabs(v_f(v_xa(v_U)), t_a), c_times(v_U, c_HOL_Oabs(v_h(v_xa(v_U)), t_a), t_a), t_a) ⇒ ¬ c_less(c_0, v_U, t_
class_Ring__and__Field_Oordered__idom(t_a) cnf(tfree_tcs, negated_conjecture)
c_less(c_0, v_x, tc_nat) ⇒ v_x = c_Suc(c_minus(v_x, c_1, tc_nat)) cnf(cls_NatBin_OSuc__pred_H$_0$, axiom)
c_less(c_0, v_n, tc_nat) or v_n = c_0 cnf(cls_Nat_Onot__gr0$_0$, axiom)
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_HOL_Oabs(c_0, t_a) = c_0 cnf(cls_OrderedGroup_Oabs__eq__0$_1$, ax
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_lessequals(c_0, c_HOL_Oabs(v_a, t_a), t_a) cnf(cls_OrderedGroup
(class_Orderings_Oorder(t_a) and c_less(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_y, t_a) cnf(cls_Orderings_Oorder__less__imp__
(class_Ring__and__Field_Opordered__cancel__semiring(t_a) and c_lessequals(c_0, v_b, t_a) and c_lessequals(c_0, v_a, t_a)) ⇒
c_lessequals(c_0, c_times(v_a, v_b, t_a), t_a) cnf(cls_Ring__and__Field_Omult__nonneg__nonneg$_0$, axiom)
class_LOrder_Ojoin__semilorder(t) ⇒ class_Orderings_Oorder(t) cnf(clsrel_LOrder_Ojoin__semilorder$_1$, axiom)
class_Ring__and__Field_Oordered__idom(t) ⇒ class_LOrder_Ojoin__semilorder(t) cnf(clsrel_Ring__and__Field_Oordered__id
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Ring__and__Field_Opordered__cancel__semiring(t) cnf(clsrel_Ring__and
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Olordered__ab__group__abs(t) cnf(clsrel_Ring__and__Fi

ANA020-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
c_less(c_0, v_x, tc_nat) ⇒ v_x = c_Suc(c_minus(v_x, c_1, tc_nat)) cnf(cls_NatBin_OSuc__pred_H$_0$, axiom)
(class_Orderings_Oorder(t_a) and c_less(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_y, t_a) cnf(cls_Orderings_Oorder__less__imp__
(class_Ring__and__Field_Opordered__cancel__semiring(t_a) and c_lessequals(c_0, v_b, t_a) and c_lessequals(c_0, v_a, t_a)) ⇒
c_lessequals(c_0, c_times(v_a, v_b, t_a), t_a) cnf(cls_Ring__and__Field_Omult__nonneg__nonneg$_0$, axiom)
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y cnf(cls_Sets
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y cnf(cls_SetsAn
v_f(c_0) = c_0 cnf(cls_conjecture$_0$, negated_conjecture)
c_less(c_0, v_c, t_a) cnf(cls_conjecture$_1$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_f(c_Suc(v_U)), t_a), c_times(v_c, c_HOL_Oabs(v_h(c_Suc(v_U)), t_a), t_a), t_a) cnf(cls_conjectur
v_x = c_0 cnf(cls_conjecture$_3$, negated_conjecture)
¬ c_lessequals(c_HOL_Oabs(v_f(v_x), t_a), c_times(v_c, c_HOL_Oabs(v_h(v_x), t_a), t_a), t_a) cnf(cls_conjecture$_4$, negated_co
class_Ring__and__Field_Oordered__idom(t_a) cnf(tfree_tcs, negated_conjecture)

ANA020-2.p Problem about Big-O notation
v_f(c_0) = c_0 cnf(cls_conjecture$_0$, negated_conjecture)
c_less(c_0, v_c, t_a) cnf(cls_conjecture$_1$, negated_conjecture)
v_x = c_0 cnf(cls_conjecture$_3$, negated_conjecture)
¬ c_lessequals(c_HOL_Oabs(v_f(v_x), t_a), c_times(v_c, c_HOL_Oabs(v_h(v_x), t_a), t_a), t_a) cnf(cls_conjecture$_4$, negated_co
class_Ring__and__Field_Oordered__idom(t_a) cnf(tfree_tcs, negated_conjecture)
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_HOL_Oabs(c_0, t_a) = c_0 cnf(cls_OrderedGroup_Oabs__eq__0$_1$, ax
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_lessequals(c_0, c_HOL_Oabs(v_a, t_a), t_a) cnf(cls_OrderedGroup
(class_Orderings_Oorder(t_a) and c_less(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_y, t_a) cnf(cls_Orderings_Oorder__less__imp__
(class_Ring__and__Field_Opordered__cancel__semiring(t_a) and c_lessequals(c_0, v_b, t_a) and c_lessequals(c_0, v_a, t_a)) ⇒
c_lessequals(c_0, c_times(v_a, v_b, t_a), t_a) cnf(cls_Ring__and__Field_Omult__nonneg__nonneg$_0$, axiom)
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Ring__and__Field_Opordered__cancel__semiring(t) cnf(clsrel_Ring__and
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Orderings_Oorder(t) cnf(clsrel_Ring__and__Field_Oordered__idom$_{44}$, ax
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Olordered__ab__group__abs(t) cnf(clsrel_Ring__and__Fi

ANA021-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
c_less(c_0, v_x, tc_nat) ⇒ v_x = c_Suc(c_minus(v_x, c_1, tc_nat)) cnf(cls_NatBin_OSuc__pred_H$_0$, axiom)
(class_Orderings_Oorder(t_a) and c_less(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_y, t_a) cnf(cls_Orderings_Oorder__less__imp__
(class_Ring__and__Field_Opordered__cancel__semiring(t_a) and c_lessequals(c_0, v_b, t_a) and c_lessequals(c_0, v_a, t_a)) ⇒
c_lessequals(c_0, c_times(v_a, v_b, t_a), t_a) cnf(cls_Ring__and__Field_Omult__nonneg__nonneg$_0$, axiom)
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y cnf(cls_Sets
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y cnf(cls_SetsAn
v_f(c_0) = c_0 cnf(cls_conjecture$_0$, negated_conjecture)
c_less(c_0, v_c, t_a) cnf(cls_conjecture$_1$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_f(c_Suc(v_U)), t_a), c_times(v_c, c_HOL_Oabs(v_h(c_Suc(v_U)), t_a), t_a), t_a) cnf(cls_conjectur
v_x ≠ c_0 cnf(cls_conjecture$_3$, negated_conjecture)
¬ c_lessequals(c_HOL_Oabs(v_f(v_x), t_a), c_times(v_c, c_HOL_Oabs(v_h(v_x), t_a), t_a), t_a) cnf(cls_conjecture$_4$, negated_co
class_Ring__and__Field_Oordered__idom(t_a) cnf(tfree_tcs, negated_conjecture)

ANA021-2.p Problem about Big-O notation
c_less(c_0, v_x, tc_nat) ⇒ v_x = c_Suc(c_minus(v_x, c_1, tc_nat)) cnf(cls_NatBin_OSuc__pred_H$_0$, axiom)
c_less(c_0, v_n, tc_nat) or v_n = c_0 cnf(cls_Nat_Onot__gr0$_0$, axiom)
c_lessequals(c_HOL_Oabs(v_f(c_Suc(v_U)), t_a), c_times(v_c, c_HOL_Oabs(v_h(c_Suc(v_U)), t_a), t_a), t_a) cnf(cls_conjectur
v_x ≠ c_0 cnf(cls_conjecture$_3$, negated_conjecture)
¬ c_lessequals(c_HOL_Oabs(v_f(v_x), t_a), c_times(v_c, c_HOL_Oabs(v_h(v_x), t_a), t_a), t_a) cnf(cls_conjecture$_4$, negated_co

ANA023-2.p Problem about Big-O notation
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_plus(c_0, v_y, t_a) = v_y cnf(cls_OrderedGroup_Ocomm__monoid__ad
(class_OrderedGroup_Opordered__ab__group__add(t_a) and c_lessequals(v_a, c_minus(v_c, v_b, t_a), t_a)) ⇒ c_lessequals(c_plus
(class_OrderedGroup_Opordered__ab__group__add(t_a) and c_lessequals(c_plus(v_a, v_b, t_a), v_c, t_a)) ⇒ c_lessequals(v_a, c_m
(class_Orderings_Oorder(t_a) and c_lessequals(v_y, v_z, t_a) and c_lessequals(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_z, t_a) cn
c_lessequals(c_0, c_minus(v_k(v_x), v_g(v_x), t_b), t_b) cnf(cls_conjecture$_1$, negated_conjecture)
c_lessequals(v_k(v_x), v_f(v_x), t_b) cnf(cls_conjecture$_2$, negated_conjecture)
¬ c_lessequals(c_0, c_minus(v_f(v_x), v_g(v_x), t_b), t_b) cnf(cls_conjecture$_3$, negated_conjecture)
class_Orderings_Olinorder(t) ⇒ class_Orderings_Oorder(t) cnf(clsrel_Orderings_Olinorder$_4$, axiom)
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Ocomm__monoid__add(t) cnf(clsrel_Ring__and__Field_C
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Orderings_Olinorder(t) cnf(clsrel_Ring__and__Field_Oordered__idom$_{33}$
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Opordered__ab__group__add(t) cnf(clsrel_Ring__and__F
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)

ANA024-2.p Problem about Big-O notation
class_OrderedGroup_Oab__group__add(t_a) ⇒ v_a = c_plus(c_minus(v_a, v_b, t_a), v_b, t_a) cnf(cls_OrderedGroup_Ocomp
(class_OrderedGroup_Opordered__ab__group__add(t_a) and c_lessequals(c_plus(v_a, v_b, t_a), v_c, t_a)) ⇒ c_lessequals(v_a, c_m
c_lessequals(v_k(v_U), v_f(v_U), t_b) cnf(cls_conjecture$_1$, negated_conjecture)
¬ c_lessequals(c_minus(v_k(v_x), v_g(v_x), t_b), c_minus(v_f(v_x), v_g(v_x), t_b), t_b) cnf(cls_conjecture$_3$, negated_conjecture
class_OrderedGroup_Opordered__ab__group__add(t) ⇒ class_OrderedGroup_Oab__group__add(t) cnf(clsrel_OrderedGroup
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Opordered__ab__group__add(t) cnf(clsrel_Ring__and__F
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)

ANA025-2.p Problem about Big-O notation

class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_lessequals(c_0, c_HOL_Oabs(v_a, t_a), t_a) cnf(cls_OrderedGroup
class_Orderings_Olinorder(t_a) ⇒ (c_less(v_y, v_x, t_a) or c_lessequals(v_x, v_y, t_a)) cnf(cls_Orderings_Olinorder__not__le$_0$
(class_Orderings_Olinorder(t_b) and c_lessequals(v_y, v_z, t_b) and c_lessequals(v_x, v_z, t_b)) ⇒ c_lessequals(c_Orderings_Om
(class_Orderings_Oorder(t_a) and c_lessequals(v_y, v_z, t_a) and c_lessequals(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_z, t_a) cn
(class_Orderings_Oorder(t_a) and c_less(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_y, t_a) cnf(cls_Orderings_Oorder__less__imp__
¬ c_lessequals(c_0, c_minus(v_k(v_x), v_g(v_x), t_b), t_b) cnf(cls_conjecture$_2$, negated_conjecture)
¬ c_lessequals(c_Orderings_Omax(c_minus(v_k(v_x), v_g(v_x), t_b), c_0, t_b), c_HOL_Oabs(c_minus(v_f(v_x), v_g(v_x), t_b), t_b), t
class_LOrder_Ojoin__semilorder(t) ⇒ class_Orderings_Oorder(t) cnf(clsrel_LOrder_Ojoin__semilorder$_1$, axiom)
class_OrderedGroup_Olordered__ab__group__abs(t) ⇒ class_LOrder_Ojoin__semilorder(t) cnf(clsrel_OrderedGroup_Olorde
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Orderings_Olinorder(t) cnf(clsrel_Ring__and__Field_Oordered__idom$_{33}$
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Olordered__ab__group__abs(t) cnf(clsrel_Ring__and__Fi
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)

ANA027-2.p Problem about Big-O notation

c_lessequals(c_0, c_minus(v_f(v_x), v_k(v_x), t_b), t_b) cnf(cls_conjecture$_1$, negated_conjecture)
c_lessequals(v_g(v_x), v_k(v_x), t_b) cnf(cls_conjecture$_2$, negated_conjecture)
¬ c_lessequals(c_0, c_minus(v_f(v_x), v_g(v_x), t_b), t_b) cnf(cls_conjecture$_3$, negated_conjecture)
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_plus(c_0, v_y, t_a) = v_y cnf(cls_OrderedGroup_Ocomm__monoid__ad
(class_OrderedGroup_Opordered__ab__group__add(t_a) and c_lessequals(v_a, c_minus(v_c, v_b, t_a), t_a)) ⇒ c_lessequals(c_plus
(class_OrderedGroup_Opordered__ab__group__add(t_a) and c_lessequals(c_plus(v_a, v_b, t_a), v_c, t_a)) ⇒ c_lessequals(v_a, c_m
(class_Orderings_Oorder(t_a) and c_lessequals(v_y, v_z, t_a) and c_lessequals(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_z, t_a) cn
class_LOrder_Ojoin__semilorder(t) ⇒ class_Orderings_Oorder(t) cnf(clsrel_LOrder_Ojoin__semilorder$_1$, axiom)
class_OrderedGroup_Olordered__ab__group__abs(t) ⇒ class_OrderedGroup_Opordered__ab__group__add(t) cnf(clsrel_Orde
class_OrderedGroup_Olordered__ab__group__abs(t) ⇒ class_LOrder_Ojoin__semilorder(t) cnf(clsrel_OrderedGroup_Olorde
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Ocomm__monoid__add(t) cnf(clsrel_Ring__and__Field_O
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Olordered__ab__group__abs(t) cnf(clsrel_Ring__and__Fi

ANA028-2.p Problem about Big-O notation

class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_plus(c_0, v_y, t_a) = v_y cnf(cls_OrderedGroup_Ocomm__monoid__ad
class_OrderedGroup_Oab__group__add(t_a) ⇒ c_plus(v_a, c_minus(v_b, v_c, t_a), t_a) = c_minus(c_plus(v_a, v_b, t_a), v_c, t_a)
class_OrderedGroup_Oab__group__add(t_a) ⇒ c_plus(c_minus(v_a, v_b, t_a), v_c, t_a) = c_minus(c_plus(v_a, v_c, t_a), v_b, t_a)
class_OrderedGroup_Oab__group__add(t_a) ⇒ c_minus(v_a, c_minus(v_b, v_c, t_a), t_a) = c_minus(c_plus(v_a, v_c, t_a), v_b, t_a
(class_OrderedGroup_Opordered__ab__group__add(t_a) and c_lessequals(v_a, c_plus(v_c, v_b, t_a), t_a)) ⇒ c_lessequals(c_minus
(class_OrderedGroup_Opordered__ab__group__add(t_a) and c_lessequals(c_plus(v_a, v_b, t_a), v_c, t_a)) ⇒ c_lessequals(v_a, c_m
class_OrderedGroup_Oab__group__add(t_a) ⇒ c_minus(v_a, v_a, t_a) = c_0 cnf(cls_OrderedGroup_Odiff__self$_0$, axiom)
c_lessequals(v_g(v_U), v_k(v_U), t_b) cnf(cls_conjecture$_1$, negated_conjecture)
¬ c_lessequals(c_minus(v_f(v_x), v_k(v_x), t_b), c_minus(v_f(v_x), v_g(v_x), t_b), t_b) cnf(cls_conjecture$_3$, negated_conjecture
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Ocomm__monoid__add(t) cnf(clsrel_Ring__and__Field_O
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Oab__group__add(t) cnf(clsrel_Ring__and__Field_Oorde
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Opordered__ab__group__add(t) cnf(clsrel_Ring__and__F
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)

ANA029-2.p Problem about Big-O notation

¬ c_lessequals(c_0, c_minus(v_f(v_x), v_k(v_x), t_b), t_b) cnf(cls_conjecture$_2$, negated_conjecture)
¬ c_lessequals(c_Orderings_Omax(c_minus(v_f(v_x), v_k(v_x), t_b), c_0, t_b), c_HOL_Oabs(c_minus(v_f(v_x), v_g(v_x), t_b), t_b), t
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_lessequals(c_0, c_HOL_Oabs(v_a, t_a), t_a) cnf(cls_OrderedGroup
(class_OrderedGroup_Opordered__ab__group__add(t_a) and c_lessequals(c_minus(v_a, v_b, t_a), c_0, t_a)) ⇒ c_lessequals(v_a, v_
(class_OrderedGroup_Opordered__ab__group__add(t_a) and c_lessequals(v_a, v_b, t_a)) ⇒ c_lessequals(c_minus(v_a, v_b, t_a), c
class_Orderings_Olinorder(t_a) ⇒ (c_less(v_y, v_x, t_a) or c_lessequals(v_x, v_y, t_a)) cnf(cls_Orderings_Olinorder__not__le$_0$
(class_Orderings_Olinorder(t_b) and c_lessequals(v_y, v_z, t_b) and c_lessequals(v_x, v_z, t_b)) ⇒ c_lessequals(c_Orderings_Om
(class_Orderings_Oorder(t_a) and c_lessequals(v_y, v_z, t_a) and c_lessequals(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_z, t_a) cn
(class_Orderings_Oorder(t_a) and c_less(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_y, t_a) cnf(cls_Orderings_Oorder__less__imp__
class_OrderedGroup_Opordered__ab__group__add(t) ⇒ class_Orderings_Oorder(t) cnf(clsrel_OrderedGroup_Opordered__a
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Orderings_Olinorder(t) cnf(clsrel_Ring__and__Field_Oordered__idom$_{33}$
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Olordered__ab__group__abs(t) cnf(clsrel_Ring__and__Fi
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Opordered__ab__group__add(t) cnf(clsrel_Ring__and__F

ANA030-2.p Problem about Big-O notation

c_lessequals(c_HOL_Oabs(c_Orderings_Omax(c_minus(v_f(v_U), v_g(v_U), t_b), c_0, t_b), t_b), c_times(v_c, c_HOL_Oabs(v_h(v_U
¬ c_lessequals(v_f(v_x(v_U)), c_plus(v_g(v_x(v_U)), c_times(v_U, c_HOL_Oabs(v_h(v_x(v_U)), t_b), t_b), t_b), t_b)   cnf(cls_co
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)
(class_OrderedGroup_Olordered__ab__group__abs(t_a) and c_lessequals(c_0, v_y, t_a)) ⇒ c_HOL_Oabs(v_y, t_a) = v_y   cnf(c
class_OrderedGroup_Oab__group__add(t_a) ⇒ c_plus(v_a, c_uminus(v_b, t_a), t_a) = c_minus(v_a, v_b, t_a)   cnf(cls_Ordered
(class_OrderedGroup_Opordered__ab__group__add(t_a) and c_lessequals(c_minus(v_a, v_b, t_a), v_c, t_a)) ⇒ c_lessequals(v_a, c
class_OrderedGroup_Oab__group__add(t_a) ⇒ c_minus(v_a, c_uminus(v_b, t_a), t_a) = c_plus(v_a, v_b, t_a)   cnf(cls_Ordered
class_OrderedGroup_Oab__group__add(t_a) ⇒ c_uminus(c_plus(v_a, v_b, t_a), t_a) = c_plus(c_uminus(v_a, t_a), c_uminus(v_b, t
class_OrderedGroup_Oab__group__add(t_a) ⇒ c_uminus(c_minus(v_a, v_b, t_a), t_a) = c_minus(v_b, v_a, t_a)   cnf(cls_Order
class_OrderedGroup_Oab__group__add(t_a) ⇒ c_uminus(c_uminus(v_y, t_a), t_a) = v_y   cnf(cls_OrderedGroup_Ominus__m
class_Orderings_Olinorder(t_b) ⇒ c_lessequals(v_y, c_Orderings_Omax(v_x, v_y, t_b), t_b)   cnf(cls_Orderings_Ole__maxI2_0,
(class_Orderings_Olinorder(t_b) and c_lessequals(c_Orderings_Omax(v_x, v_y, t_b), v_z, t_b)) ⇒ c_lessequals(v_x, v_z, t_b)
class_OrderedGroup_Olordered__ab__group__abs(t) ⇒ class_OrderedGroup_Opordered__ab__group__add(t)   cnf(clsrel_Orde
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Orderings_Olinorder(t)   cnf(clsrel_Ring__and__Field_Oordered__idom$_{33}$
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Oab__group__add(t)   cnf(clsrel_Ring__and__Field_Oorde
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Olordered__ab__group__abs(t)   cnf(clsrel_Ring__and__Fi

ANA031-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Osemigroup__mult(t_a) ⇒ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, v_b, t_a) = c_times(v_b, v_a, t_a)   cnf(cls_OrderedGroup_C
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, c_times(v_b, v_c, t_a), t_a) = c_times(v_b, c_times(v_a, v_c, t_a
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y   cnf(cls_Sets
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y   cnf(cls_SetsAn
c_lessequals(c_HOL_Oabs(v_b(v_U), t_b), c_times(v_c, c_HOL_Oabs(v_g(v_U), t_b), t_b), t_b)   cnf(cls_conjecture$_0$, negated_co
¬ c_lessequals(c_times(c_HOL_Oabs(v_b(v_x(v_U)), t_b), c_HOL_Oabs(v_f(v_x(v_U)), t_b), t_b), c_times(v_U, c_times(c_HOL_Oa
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)

ANA031-2.p Problem about Big-O notation
c_lessequals(c_HOL_Oabs(v_b(v_U), t_b), c_times(v_c, c_HOL_Oabs(v_g(v_U), t_b), t_b), t_b)   cnf(cls_conjecture$_0$, negated_co
¬ c_lessequals(c_times(c_HOL_Oabs(v_b(v_x(v_U)), t_b), c_HOL_Oabs(v_f(v_x(v_U)), t_b), t_b), c_times(v_U, c_times(c_HOL_Oa
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_lessequals(c_0, c_HOL_Oabs(v_a, t_a), t_a)   cnf(cls_OrderedGroup
class_OrderedGroup_Osemigroup__mult(t_a) ⇒ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, v_b, t_a) = c_times(v_b, v_a, t_a)   cnf(cls_OrderedGroup_C
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Oab__semigroup__mult(t)   cnf(clsrel_Ring__and__Field_C
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Osemigroup__mult(t)   cnf(clsrel_Ring__and__Field_Oorc
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Ring__and__Field_Opordered__semiring(t)   cnf(clsrel_Ring__and__Field_
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Olordered__ab__group__abs(t)   cnf(clsrel_Ring__and__Fi
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)

ANA032-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Osemigroup__mult(t_a) ⇒ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, v_b, t_a) = c_times(v_b, v_a, t_a)   cnf(cls_OrderedGroup_C
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, c_times(v_b, v_c, t_a), t_a) = c_times(v_b, c_times(v_a, v_c, t_a
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y   cnf(cls_Sets
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y   cnf(cls_SetsAn
c_lessequals(c_HOL_Oabs(v_b(v_x), t_b), c_times(v_c, c_HOL_Oabs(v_g(v_x), t_b), t_b), t_b)   cnf(cls_conjecture$_0$, negated_con
¬ c_lessequals(c_times(c_HOL_Oabs(v_b(v_x), t_b), c_HOL_Oabs(v_f(v_x), t_b), t_b), c_times(v_c, c_times(c_HOL_Oabs(v_f(v_x),
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)

ANA032-2.p Problem about Big-O notation
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_lessequals(c_0, c_HOL_Oabs(v_a, t_a), t_a)   cnf(cls_OrderedGroup
class_OrderedGroup_Osemigroup__mult(t_a) ⇒ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a

class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, v_b, t_a) = c_times(v_b, v_a, t_a) cnf(cls_OrderedGroup_O
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
c_lessequals(c_HOL_Oabs(v_b(v_x), t_b), c_times(v_c, c_HOL_Oabs(v_g(v_x), t_b), t_b), t_b) cnf(cls_conjecture$_0$, negated_con
¬ c_lessequals(c_times(c_HOL_Oabs(v_b(v_x), t_b), c_HOL_Oabs(v_f(v_x), t_b), t_b), c_times(v_c, c_times(c_HOL_Oabs(v_f(v_x),
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Oab__semigroup__mult(t) cnf(clsrel_Ring__and__Field_O
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Osemigroup__mult(t) cnf(clsrel_Ring__and__Field_Oord
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Ring__and__Field_Opordered__semiring(t) cnf(clsrel_Ring__and__Field_
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Olordered__ab__group__abs(t) cnf(clsrel_Ring__and__Fi
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)

ANA033-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Osemigroup__mult(t_a) ⇒ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, v_b, t_a) = c_times(v_b, v_a, t_a) cnf(cls_OrderedGroup_O
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, c_times(v_b, v_c, t_a), t_a) = c_times(v_b, c_times(v_a, v_c, t_a
(class_Orderings_Oorder(t_a) and c_less(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_y, t_a) cnf(cls_Orderings_Oorder__less__imp__
class_Ring__and__Field_Oordered__idom(t_a) ⇒ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_c, v_d, t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequal
c_lessequals(c_times(v_a, v_c, t_a), c_times(v_b, v_d, t_a), t_a) cnf(cls_Ring__and__Field_Omult__mono$_0$, axiom)
(class_Ring__and__Field_Opordered__cancel__semiring(t_a) and c_lessequals(c_0, v_b, t_a) and c_lessequals(c_0, v_a, t_a)) ⇒
c_lessequals(c_0, c_times(v_a, v_b, t_a), t_a) cnf(cls_Ring__and__Field_Omult__nonneg__nonneg$_0$, axiom)
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y cnf(cls_SetsA
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y cnf(cls_SetsAn
c_less(c_0, v_c, t_b) cnf(cls_conjecture$_0$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_a(v_U), t_b), c_times(v_c, c_HOL_Oabs(v_f(v_U), t_b), t_b), t_b) cnf(cls_conjecture$_1$, negated_co
c_less(c_0, v_ca, t_b) cnf(cls_conjecture$_2$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_b(v_U), t_b), c_times(v_ca, c_HOL_Oabs(v_g(v_U), t_b), t_b), t_b) cnf(cls_conjecture$_3$, negated_c
¬ c_lessequals(c_HOL_Oabs(c_times(v_a(v_x(v_U)), v_b(v_x(v_U)), t_b), t_b), c_times(v_U, c_HOL_Oabs(c_times(v_f(v_x(v_U)),
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)

ANA034-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Osemigroup__mult(t_a) ⇒ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, v_b, t_a) = c_times(v_b, v_a, t_a) cnf(cls_OrderedGroup_O
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, c_times(v_b, v_c, t_a), t_a) = c_times(v_b, c_times(v_a, v_c, t_a
(class_Orderings_Oorder(t_a) and c_less(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_y, t_a) cnf(cls_Orderings_Oorder__less__imp__
class_Ring__and__Field_Oordered__idom(t_a) ⇒ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_c, v_d, t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequal
c_lessequals(c_times(v_a, v_c, t_a), c_times(v_b, v_d, t_a), t_a) cnf(cls_Ring__and__Field_Omult__mono$_0$, axiom)
(class_Ring__and__Field_Opordered__cancel__semiring(t_a) and c_lessequals(c_0, v_b, t_a) and c_lessequals(c_0, v_a, t_a)) ⇒
c_lessequals(c_0, c_times(v_a, v_b, t_a), t_a) cnf(cls_Ring__and__Field_Omult__nonneg__nonneg$_0$, axiom)
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y cnf(cls_SetsA
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y cnf(cls_SetsAn
c_less(c_0, v_c, t_b) cnf(cls_conjecture$_0$, negated_conjecture)
c_less(c_0, v_ca, t_b) cnf(cls_conjecture$_1$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_a(v_x), t_b), c_times(v_c, c_HOL_Oabs(v_f(v_x), t_b), t_b), t_b) cnf(cls_conjecture$_2$, negated_con
c_lessequals(c_HOL_Oabs(v_b(v_x), t_b), c_times(v_ca, c_HOL_Oabs(v_g(v_x), t_b), t_b), t_b) cnf(cls_conjecture$_3$, negated_co
c_times(c_times(v_c, v_ca, t_b), c_HOL_Oabs(c_times(v_f(v_x), v_g(v_x), t_b), t_b), t_b) = c_times(c_times(v_c, c_HOL_Oabs(v_f(
¬ c_lessequals(c_HOL_Oabs(c_times(v_a(v_x), v_b(v_x), t_b), t_b), c_times(c_times(v_c, v_ca, t_b), c_HOL_Oabs(c_times(v_f(v_x)
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)

ANA034-2.p Problem about Big-O notation
class_Ring__and__Field_Oordered__idom(t_a) ⇒ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_c, v_d, t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequal
c_lessequals(c_times(v_a, v_c, t_a), c_times(v_b, v_d, t_a), t_a) cnf(cls_Ring__and__Field_Omult__mono$_0$, axiom)
(class_Ring__and__Field_Opordered__cancel__semiring(t_a) and c_lessequals(c_0, v_b, t_a) and c_lessequals(c_0, v_a, t_a)) ⇒
c_lessequals(c_0, c_times(v_a, v_b, t_a), t_a) cnf(cls_Ring__and__Field_Omult__nonneg__nonneg$_0$, axiom)

(class_Orderings_Oorder(t_a) and c_less(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_y, t_a)   cnf(cls_Orderings_Oorder__less__imp__
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_lessequals(c_0, c_HOL_Oabs(v_a, t_a), t_a)   cnf(cls_OrderedGroup
c_less(c_0, v_c, t_b)   cnf(cls_conjecture$_0$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_a(v_x), t_b), c_times(v_c, c_HOL_Oabs(v_f(v_x), t_b), t_b), t_b)   cnf(cls_conjecture$_2$, negated_con
c_lessequals(c_HOL_Oabs(v_b(v_x), t_b), c_times(v_ca, c_HOL_Oabs(v_g(v_x), t_b), t_b), t_b)   cnf(cls_conjecture$_3$, negated_co
c_times(c_times(v_c, v_ca, t_b), c_HOL_Oabs(c_times(v_f(v_x), v_g(v_x), t_b), t_b), t_b) = c_times(c_times(v_c, c_HOL_Oabs(v_f(
¬ c_lessequals(c_HOL_Oabs(c_times(v_a(v_x), v_b(v_x), t_b), t_b), c_times(c_times(v_c, v_ca, t_b), c_HOL_Oabs(c_times(v_f(v_x)
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)
class_OrderedGroup_Olordered__ab__group__abs(t) ⇒ class_Orderings_Oorder(t)   cnf(clsrel_OrderedGroup_Olordered__ab
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Ring__and__Field_Opordered__cancel__semiring(t)   cnf(clsrel_Ring__and
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Ring__and__Field_Opordered__semiring(t)   cnf(clsrel_Ring__and__Field_
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Olordered__ab__group__abs(t)   cnf(clsrel_Ring__and__Fi

ANA035-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Osemigroup__mult(t_a) ⇒ c_times(c_times(v_a, v_b, t_a), v_c, t_a) = c_times(v_a, c_times(v_b, v_c, t_a), t_a
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, v_b, t_a) = c_times(v_b, v_a, t_a)   cnf(cls_OrderedGroup_C
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, c_times(v_b, v_c, t_a), t_a) = c_times(v_b, c_times(v_a, v_c, t_a
(class_Orderings_Oorder(t_a) and c_less(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_y, t_a)   cnf(cls_Orderings_Oorder__less__imp__
class_Ring__and__Field_Oordered__idom(t_a) ⇒ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_c, v_d, t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequal
c_lessequals(c_times(v_a, v_c, t_a), c_times(v_b, v_d, t_a), t_a)   cnf(cls_Ring__and__Field_Omult__mono$_0$, axiom)
(class_Ring__and__Field_Opordered__cancel__semiring(t_a) and c_lessequals(c_0, v_b, t_a) and c_lessequals(c_0, v_a, t_a)) ⇒
c_lessequals(c_0, c_times(v_a, v_b, t_a), t_a)   cnf(cls_Ring__and__Field_Omult__nonneg__nonneg$_0$, axiom)
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y   cnf(cls_SetsA
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y   cnf(cls_SetsAn
c_less(c_0, v_c, t_b)   cnf(cls_conjecture$_0$, negated_conjecture)
c_less(c_0, v_ca, t_b)   cnf(cls_conjecture$_1$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_a(v_x), t_b), c_times(v_c, c_HOL_Oabs(v_f(v_x), t_b), t_b), t_b)   cnf(cls_conjecture$_2$, negated_con
c_lessequals(c_HOL_Oabs(v_b(v_x), t_b), c_times(v_ca, c_HOL_Oabs(v_g(v_x), t_b), t_b), t_b)   cnf(cls_conjecture$_3$, negated_co
c_times(c_times(v_c, v_ca, t_b), c_HOL_Oabs(c_times(v_f(v_x), v_g(v_x), t_b), t_b), t_b) ≠ c_times(c_times(v_c, c_HOL_Oabs(v_f(
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)

ANA035-2.p Problem about Big-O notation
c_times(c_times(v_c, v_ca, t_b), c_HOL_Oabs(c_times(v_f(v_x), v_g(v_x), t_b), t_b), t_b) ≠ c_times(c_times(v_c, c_HOL_Oabs(v_f(
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, v_b, t_a) = c_times(v_b, v_a, t_a)   cnf(cls_OrderedGroup_C
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, c_times(v_b, v_c, t_a), t_a) = c_times(v_b, c_times(v_a, v_c, t_a
class_Ring__and__Field_Oordered__idom(t_a) ⇒ c_HOL_Oabs(c_times(v_a, v_b, t_a), t_a) = c_times(c_HOL_Oabs(v_a, t_a), c_H
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Oab__semigroup__mult(t)   cnf(clsrel_Ring__and__Field_C

ANA036-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_lessequals(c_HOL_Oabs(c_plus(v_a, v_b, t_a), t_a), c_plus(c_HOL_Oa
(class_OrderedGroup_Opordered__ab__semigroup__add(t_a) and c_lessequals(v_c, v_d, t_a) and c_lessequals(v_a, v_b, t_a)) ⇒
c_lessequals(c_plus(v_a, v_c, t_a), c_plus(v_b, v_d, t_a), t_a)   cnf(cls_OrderedGroup_Oadd__mono$_0$, axiom)
(class_OrderedGroup_Ocomm__monoid__add(t_a) and class_OrderedGroup_Opordered__cancel__ab__semigroup__add(t_a) and c
c_lessequals(c_0, c_plus(v_x, v_y, t_a), t_a)   cnf(cls_OrderedGroup_Oadd__nonneg__nonneg$_0$, axiom)
class_Orderings_Olinorder(t_b) ⇒ c_lessequals(v_x, c_Orderings_Omax(v_x, v_y, t_b), t_b)   cnf(cls_Orderings_Ole__maxI1$_0$,
class_Orderings_Olinorder(t_b) ⇒ c_lessequals(v_y, c_Orderings_Omax(v_x, v_y, t_b), t_b)   cnf(cls_Orderings_Ole__maxI2$_0$,
(class_Orderings_Oorder(t_a) and c_lessequals(v_y, v_z, t_a) and c_lessequals(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_z, t_a)   cn
(class_Orderings_Oorder(t_a) and c_less(v_x, v_y, t_a) and c_lessequals(v_y, v_z, t_a)) ⇒ c_less(v_x, v_z, t_a)   cnf(cls_Orderi
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
class_Ring__and__Field_Osemiring(t_a) ⇒ c_times(v_a, c_plus(v_b, v_c, t_a), t_a) = c_plus(c_times(v_a, v_b, t_a), c_times(v_a, v_c
class_Ring__and__Field_Osemiring(t_a) ⇒ c_times(c_plus(v_a, v_b, t_a), v_c, t_a) = c_plus(c_times(v_a, v_c, t_a), c_times(v_b, v_c
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y   cnf(cls_SetsA
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y   cnf(cls_SetsAn

c_lessequals(c_0, v_f(v_U), t_b) cnf(cls_conjecture$_0$, negated_conjecture)
c_lessequals(c_0, v_g(v_U), t_b) cnf(cls_conjecture$_1$, negated_conjecture)
c_less(c_0, v_c, t_b) cnf(cls_conjecture$_2$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_a(v_U), t_b), c_times(v_c, v_f(v_U), t_b), t_b) cnf(cls_conjecture$_3$, negated_conjecture)
c_less(c_0, v_ca, t_b) cnf(cls_conjecture$_4$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_b(v_U), t_b), c_times(v_ca, v_g(v_U), t_b), t_b) cnf(cls_conjecture$_5$, negated_conjecture)
c_lessequals(c_HOL_Oabs(c_plus(v_a(v_xa(v_U)), v_b(v_xa(v_U)), t_b), t_b), c_times(v_U, c_HOL_Oabs(c_plus(v_f(v_xa(v_U)), v
¬ c_less(c_0, v_U, t_b) cnf(cls_conjecture$_6$, negated_conjecture)
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)

ANA037-2.p Problem about Big-O notation
c_lessequals(c_0, v_f(v_xa), t_b) cnf(cls_conjecture$_2$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_a(v_xa), t_b), c_times(v_c, v_f(v_xa), t_b), t_b) cnf(cls_conjecture$_4$, negated_conjecture)
¬ c_lessequals(c_HOL_Oabs(v_a(v_xa), t_b), c_times(c_Orderings_Omax(v_c, v_ca, t_b), v_f(v_xa), t_b), t_b) cnf(cls_conjectur
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)
class_Orderings_Olinorder(t_b) ⇒ c_lessequals(v_x, c_Orderings_Omax(v_x, v_y, t_b), t_b) cnf(cls_Orderings_Ole__maxI1$_0$,
(class_Orderings_Oorder(t_a) and c_lessequals(v_y, v_z, t_a) and c_lessequals(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_z, t_a) cn
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Orderings_Olinorder(t) cnf(clsrel_Ring__and__Field_Oordered__idom$_{33}$
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Ring__and__Field_Opordered__semiring(t) cnf(clsrel_Ring__and__Field_
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Orderings_Oorder(t) cnf(clsrel_Ring__and__Field_Oordered__idom$_{44}$, ax

ANA038-2.p Problem about Big-O notation
c_lessequals(c_0, v_g(v_xa), t_b) cnf(cls_conjecture$_3$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_b(v_xa), t_b), c_times(v_ca, v_g(v_xa), t_b), t_b) cnf(cls_conjecture$_5$, negated_conjecture)
¬ c_lessequals(c_HOL_Oabs(v_b(v_xa), t_b), c_times(c_Orderings_Omax(v_c, v_ca, t_b), v_g(v_xa), t_b), t_b) cnf(cls_conjectu
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)
class_Orderings_Olinorder(t_b) ⇒ c_lessequals(v_y, c_Orderings_Omax(v_x, v_y, t_b), t_b) cnf(cls_Orderings_Ole__maxI2$_0$,
(class_Orderings_Oorder(t_a) and c_lessequals(v_y, v_z, t_a) and c_lessequals(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_z, t_a) cn
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Orderings_Olinorder(t) cnf(clsrel_Ring__and__Field_Oordered__idom$_{33}$
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Ring__and__Field_Opordered__semiring(t) cnf(clsrel_Ring__and__Field_
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Orderings_Oorder(t) cnf(clsrel_Ring__and__Field_Oordered__idom$_{44}$, ax

ANA039-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-2.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_lessequals(v_a, c_HOL_Oabs(v_a, t_a), t_a) cnf(cls_OrderedGrou
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_lessequals(c_0, c_HOL_Oabs(v_a, t_a), t_a) cnf(cls_OrderedGroup
(class_Orderings_Oorder(t_a) and c_lessequals(v_y, v_z, t_a) and c_lessequals(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_z, t_a) cn
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
c_lessequals(c_HOL_Oabs(v_h(v_U), t_a), c_times(v_c, c_HOL_Oabs(v_f(v_U), t_a), t_a), t_a) cnf(cls_conjecture$_0$, negated_co
v_c $\neq c_0$ cnf(cls_conjecture$_1$, negated_conjecture)
¬ c_lessequals(c_HOL_Oabs(v_h(v_x), t_a), c_times(c_HOL_Oabs(v_c, t_a), c_HOL_Oabs(v_f(v_x), t_a), t_a), t_a) cnf(cls_conj
class_Ring__and__Field_Oordered__idom(t_a) cnf(tfree_tcs, negated_conjecture)

ANA039-2.p Problem about Big-O notation
c_lessequals(c_HOL_Oabs(v_h(v_U), t_a), c_times(v_c, c_HOL_Oabs(v_f(v_U), t_a), t_a), t_a) cnf(cls_conjecture$_0$, negated_co
¬ c_lessequals(c_HOL_Oabs(v_h(v_x), t_a), c_times(c_HOL_Oabs(v_c, t_a), c_HOL_Oabs(v_f(v_x), t_a), t_a), t_a) cnf(cls_conj
class_Ring__and__Field_Oordered__idom(t_a) cnf(tfree_tcs, negated_conjecture)
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_lessequals(v_a, c_HOL_Oabs(v_a, t_a), t_a) cnf(cls_OrderedGrou
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_lessequals(c_0, c_HOL_Oabs(v_a, t_a), t_a) cnf(cls_OrderedGroup
(class_Orderings_Oorder(t_a) and c_lessequals(v_y, v_z, t_a) and c_lessequals(v_x, v_y, t_a)) ⇒ c_lessequals(v_x, v_z, t_a) cn
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Ring__and__Field_Opordered__semiring(t) cnf(clsrel_Ring__and__Field_
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Orderings_Oorder(t) cnf(clsrel_Ring__and__Field_Oordered__idom$_{44}$, ax
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Olordered__ab__group__abs(t) cnf(clsrel_Ring__and__Fi

ANA041-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')

include('Axioms/MSC001-0.ax')
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y cnf(cls_Sets
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y cnf(cls_SetsAn
c_lessequals(c_0, v_h(v_U, v_V), t_c) cnf(cls_conjecture$_0$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_f(v_U, v_V), t_c), c_times(v_x, v_h(v_U, v_V), t_c), t_c) cnf(cls_conjecture$_1$, negated_conjecture)
c_in(v_xb, v_A(v_xa), t_b) cnf(cls_conjecture$_2$, negated_conjecture)
¬ c_lessequals(c_0, v_h(v_xa, v_xb), t_c) cnf(cls_conjecture$_3$, negated_conjecture)
class_Ring__and__Field_Oordered__idom(t_c) cnf(tfree_tcs, negated_conjecture)

ANA041-2.p Problem about Big-O notation
c_lessequals(c_0, v_h(v_U, v_V), t_c) cnf(cls_conjecture$_0$, negated_conjecture)
¬ c_lessequals(c_0, v_h(v_xa, v_xb), t_c) cnf(cls_conjecture$_3$, negated_conjecture)

ANA042-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y cnf(cls_Sets
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y cnf(cls_SetsAn
c_lessequals(c_0, v_h(v_U, v_V), t_c) cnf(cls_conjecture$_0$, negated_conjecture)
c_lessequals(c_HOL_Oabs(v_f(v_U, v_V), t_c), c_times(v_x, v_h(v_U, v_V), t_c), t_c) cnf(cls_conjecture$_1$, negated_conjecture)
c_in(v_xb(v_U), v_A(v_xa(v_U)), t_b) cnf(cls_conjecture$_2$, negated_conjecture)
¬ c_lessequals(c_HOL_Oabs(v_f(v_xa(v_U), v_xb(v_U)), t_c), c_times(v_U, v_h(v_xa(v_U), v_xb(v_U)), t_c), t_c) cnf(cls_conje
class_Ring__and__Field_Oordered__idom(t_c) cnf(tfree_tcs, negated_conjecture)

ANA042-2.p Problem about Big-O notation
c_lessequals(c_HOL_Oabs(v_f(v_U, v_V), t_c), c_times(v_x, v_h(v_U, v_V), t_c), t_c) cnf(cls_conjecture$_1$, negated_conjecture)
¬ c_lessequals(c_HOL_Oabs(v_f(v_xa(v_U), v_xb(v_U)), t_c), c_times(v_U, v_h(v_xa(v_U), v_xb(v_U)), t_c), t_c) cnf(cls_conje

ANA043-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, c_times(v_b, v_c, t_a), t_a) = c_times(v_b, c_times(v_a, v_c, t_a
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y cnf(cls_Sets
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y cnf(cls_SetsAn
c_lessequals(c_HOL_Oabs(v_f(v_U), t_b), c_times(v_c, c_HOL_Oabs(v_h(v_U), t_b), t_b), t_b) cnf(cls_conjecture$_0$, negated_co
¬ c_lessequals(c_times(c_HOL_Oabs(v_l(v_x(v_U), v_xa(v_U)), t_b), c_HOL_Oabs(v_f(v_k(v_x(v_U), v_xa(v_U))), t_b), t_b), c_tim
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)

ANA043-2.p Problem about Big-O notation
c_lessequals(c_HOL_Oabs(v_f(v_U), t_b), c_times(v_c, c_HOL_Oabs(v_h(v_U), t_b), t_b), t_b) cnf(cls_conjecture$_0$, negated_co
¬ c_lessequals(c_times(c_HOL_Oabs(v_l(v_x(v_U), v_xa(v_U)), t_b), c_HOL_Oabs(v_f(v_k(v_x(v_U), v_xa(v_U))), t_b), t_b), c_tim
class_Ring__and__Field_Oordered__idom(t_b) cnf(tfree_tcs, negated_conjecture)
class_OrderedGroup_Olordered__ab__group__abs(t_a) ⇒ c_lessequals(c_0, c_HOL_Oabs(v_a, t_a), t_a) cnf(cls_OrderedGroup
class_OrderedGroup_Oab__semigroup__mult(t_a) ⇒ c_times(v_a, c_times(v_b, v_c, t_a), t_a) = c_times(v_b, c_times(v_a, v_c, t_a
(class_Ring__and__Field_Opordered__semiring(t_a) and c_lessequals(v_a, v_b, t_a) and c_lessequals(c_0, v_c, t_a)) ⇒ c_lessequals
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Oab__semigroup__mult(t) cnf(clsrel_Ring__and__Field_
class_Ring__and__Field_Oordered__idom(t) ⇒ class_Ring__and__Field_Opordered__semiring(t) cnf(clsrel_Ring__and__Field_
class_Ring__and__Field_Oordered__idom(t) ⇒ class_OrderedGroup_Olordered__ab__group__abs(t) cnf(clsrel_Ring__and__Fi

ANA044-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
(class_Ring__and__Field_Opordered__cancel__semiring(t_a) and c_lessequals(c_0, v_b, t_a) and c_lessequals(c_0, v_a, t_a)) ⇒
c_lessequals(c_0, c_times(v_a, v_b, t_a), t_a) cnf(cls_Ring__and__Field_Omult__nonneg__nonneg$_0$, axiom)
class_OrderedGroup_Ocomm__monoid__mult(t_a) ⇒ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y cnf(cls_Sets
class_OrderedGroup_Ocomm__monoid__add(t_a) ⇒ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y cnf(cls_SetsAn
c_lessequals(c_0, v_l(v_U, v_V), t_b) cnf(cls_conjecture$_0$, negated_conjecture)
c_lessequals(c_0, v_h(v_U), t_b) cnf(cls_conjecture$_1$, negated_conjecture)
c_in(v_xa, v_A(v_x), t_d) cnf(cls_conjecture$_2$, negated_conjecture)

c_times(v_l(v_x, v_xa), v_h(v_k(v_x, v_xa)), t_b) $\neq$ c_HOL_Oabs(c_times(v_l(v_x, v_xa), v_h(v_k(v_x, v_xa)), t_b), t_b)   cnf(cls
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)

ANA044-2.p Problem about Big-O notation
c_lessequals(c_0, v_l(v_U, v_V), t_b)   cnf(cls_conjecture$_0$, negated_conjecture)
c_lessequals(c_0, v_h(v_U), t_b)   cnf(cls_conjecture$_1$, negated_conjecture)
c_times(v_l(v_x, v_xa), v_h(v_k(v_x, v_xa)), t_b) $\neq$ c_HOL_Oabs(c_times(v_l(v_x, v_xa), v_h(v_k(v_x, v_xa)), t_b), t_b)   cnf(cls
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)
(class_OrderedGroup_Olordered__ab__group__abs(t_a) and c_lessequals(c_0, v_y, t_a)) $\Rightarrow$ c_HOL_Oabs(v_y, t_a) = v_y   cnf(c
(class_Ring__and__Field_Opordered__cancel__semiring(t_a) and c_lessequals(c_0, v_b, t_a) and c_lessequals(c_0, v_a, t_a)) $\Rightarrow$
c_lessequals(c_0, c_times(v_a, v_b, t_a), t_a)   cnf(cls_Ring__and__Field_Omult__nonneg__nonneg$_0$, axiom)
class_Ring__and__Field_Oordered__idom(t) $\Rightarrow$ class_Ring__and__Field_Opordered__cancel__semiring(t)   cnf(clsrel_Ring__and
class_Ring__and__Field_Oordered__idom(t) $\Rightarrow$ class_OrderedGroup_Olordered__ab__group__abs(t)   cnf(clsrel_Ring__and__Fi

ANA045-1.p Problem about Big-O notation
include('Axioms/ANA003-0.ax')
include('Axioms/MSC001-1.ax')
include('Axioms/MSC001-0.ax')
class_OrderedGroup_Ocomm__monoid__mult(t_a) $\Rightarrow$ c_SetsAndFunctions_Oelt__set__times(c_1, v_y, t_a) = v_y   cnf(cls_SetsA
class_OrderedGroup_Ocomm__monoid__add(t_a) $\Rightarrow$ c_SetsAndFunctions_Oelt__set__plus(c_0, v_y, t_a) = v_y   cnf(cls_SetsAn
$\neg$ c_lessequals(c_0, c_times(v_U, c_HOL_Oabs(v_g(v_x(v_U)), t_b), t_b), t_b)   cnf(cls_conjecture$_0$, negated_conjecture)
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)

ANA045-2.p Problem about Big-O notation
$\neg$ c_lessequals(c_0, c_times(v_U, c_HOL_Oabs(v_g(v_x(v_U)), t_b), t_b), t_b)   cnf(cls_conjecture$_0$, negated_conjecture)
class_Ring__and__Field_Oordered__idom(t_b)   cnf(tfree_tcs, negated_conjecture)
class_OrderedGroup_Olordered__ab__group__abs(t_a) $\Rightarrow$ c_lessequals(c_0, c_HOL_Oabs(v_a, t_a), t_a)   cnf(cls_OrderedGroup
class_Ring__and__Field_Oordered__idom(t_a) $\Rightarrow$ v_c = c_times(c_1, v_c, t_a)   cnf(cls_Ring__and__Field_Omult__cancel__right1
class_Ring__and__Field_Oordered__idom(t) $\Rightarrow$ class_OrderedGroup_Olordered__ab__group__abs(t)   cnf(clsrel_Ring__and__Fi