1 Active Clauses

(C9) $\vdash m_0 + (((k * (l_0 + (\mathbf{1} + \mathbf{1}))) + (l_0 * (m_0 + \mathbf{1}))) + \mathbf{1}) = k + ((k + (m_0 + \mathbf{1})) * (l_0 + \mathbf{1}))$

(C402) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_0 + \mathbf{1})) * (t_1 + \mathbf{1}))$
(subsumes 1 clause)

(C404) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_1 + \mathbf{1})) * (t_0 + \mathbf{1}))$
(subsumes 1 clause)

(C405) $\vdash (((t_0 + \mathbf{1}) * t_1) + t_0) + \mathbf{1} = (t_0 + \mathbf{1}) * (t_1 + \mathbf{1})$ (subsumes 1 clause)

(C421) $\mathbf{0} < \mathbf{p_0} \vdash \mathbf{p_0} = s_7(\mathbf{p_0}) + \mathbf{1}$

(C422) $\mathbf{0} < \mathbf{p_0} \vdash t_0 = s_5(\mathbf{p_0}, t_0) + (s_6(\mathbf{p_0}, t_0) * \mathbf{p_0})$

(C423) $\mathbf{0} < \mathbf{p_0}, s_5(\mathbf{p_0}, t_0) = \mathbf{0} \vdash t_0 = \mathbf{0} + (s_6(\mathbf{p_0}, t_0) * \mathbf{p_0})$

(C424) $\mathbf{0} < \mathbf{p_0} \vdash s_5(\mathbf{p_0}, t_0) < \mathbf{p_0}$

(C438) $\mathbf{0} < \mathbf{p_1} \vdash \mathbf{p_1} = s_7(\mathbf{p_1}) + \mathbf{1}$

(C439) $\mathbf{0} < \mathbf{p_1} \vdash t_0 = s_5(\mathbf{p_1}, t_0) + (s_6(\mathbf{p_1}, t_0) * \mathbf{p_1})$

(C440) $\mathbf{0} < \mathbf{p_1}, s_5(\mathbf{p_1}, t_0) = \mathbf{0} \vdash t_0 = \mathbf{0} + (s_6(\mathbf{p_1}, t_0) * \mathbf{p_1})$

(C441) $\mathbf{0} < \mathbf{p_1} \vdash s_5(\mathbf{p_1}, t_0) < \mathbf{p_1}$

(C455) $\mathbf{0} < \mathbf{p_2} \vdash \mathbf{p_2} = s_7(\mathbf{p_2}) + \mathbf{1}$

(C456) $\mathbf{0} < \mathbf{p_2} \vdash t_0 = s_5(\mathbf{p_2}, t_0) + (s_6(\mathbf{p_2}, t_0) * \mathbf{p_2})$

(C457) $\mathbf{0} < \mathbf{p_2}, s_5(\mathbf{p_2}, t_0) = \mathbf{0} \vdash t_0 = \mathbf{0} + (s_6(\mathbf{p_2}, t_0) * \mathbf{p_2})$

(C458) $\mathbf{0} < \mathbf{p_2} \vdash s_5(\mathbf{p_2}, t_0) < \mathbf{p_2}$

(C472) $\mathbf{0} < \mathbf{p_3} \vdash \mathbf{p_3} = s_7(\mathbf{p_3}) + \mathbf{1}$

(C473) $\mathbf{0} < \mathbf{p_3} \vdash t_0 = s_5(\mathbf{p_3}, t_0) + (s_6(\mathbf{p_3}, t_0) * \mathbf{p_3})$

(C474) $\mathbf{0} < \mathbf{p_3}, s_5(\mathbf{p_3}, t_0) = \mathbf{0} \vdash t_0 = \mathbf{0} + (s_6(\mathbf{p_3}, t_0) * \mathbf{p_3})$

(C475) $\mathbf{0} < \mathbf{p_3} \vdash s_5(\mathbf{p_3}, t_0) < \mathbf{p_3}$

(C489) $\mathbf{0} < \mathbf{p_4} \vdash \mathbf{p_4} = s_7(\mathbf{p_4}) + \mathbf{1}$

(C490) $\mathbf{0} < \mathbf{p_4} \vdash t_0 = s_5(\mathbf{p_4}, t_0) + (s_6(\mathbf{p_4}, t_0) * \mathbf{p_4})$

(C491) $\mathbf{0} < \mathbf{p_4}, s_5(\mathbf{p_4}, t_0) = \mathbf{0} \vdash t_0 = \mathbf{0} + (s_6(\mathbf{p_4}, t_0) * \mathbf{p_4})$

(C492) $\mathbf{0} < \mathbf{p_4} \vdash s_5(\mathbf{p_4}, t_0) < \mathbf{p_4}$

(C506) $\mathbf{0} < \mathbf{p_5} \vdash \mathbf{p_5} = s_7(\mathbf{p_5}) + \mathbf{1}$

(C507) $\mathbf{0} < \mathbf{p_5} \vdash t_0 = s_5(\mathbf{p_5}, t_0) + (s_6(\mathbf{p_5}, t_0) * \mathbf{p_5})$

(C508) $\mathbf{0} < \mathbf{p_5}, s_5(\mathbf{p_5}, t_0) = \mathbf{0} \vdash t_0 = \mathbf{0} + (s_6(\mathbf{p_5}, t_0) * \mathbf{p_5})$

(C509) $\mathbf{0} < \mathbf{p_5} \vdash s_5(\mathbf{p_5}, t_0) < \mathbf{p_5}$

(C523) $\mathbf{0} < \mathbf{p_6} \vdash \mathbf{p_6} = s_7(\mathbf{p_6}) + \mathbf{1}$

(C524) $\mathbf{0} < \mathbf{p_6} \vdash t_0 = s_5(\mathbf{p_6}, t_0) + (s_6(\mathbf{p_6}, t_0) * \mathbf{p_6})$

(C525) $\mathbf{0} < \mathbf{p_6}, s_5(\mathbf{p_6}, t_0) = \mathbf{0} \vdash t_0 = \mathbf{0} + (s_6(\mathbf{p_6}, t_0) * \mathbf{p_6})$

(C526) $\mathbf{0} < \mathbf{p_6} \vdash s_5(\mathbf{p_6}, t_0) < \mathbf{p_6}$

(C540) $\mathbf{0} < \mathbf{p_7} \vdash \mathbf{p_7} = s_7(\mathbf{p_7}) + \mathbf{1}$

(C541) $\mathbf{0} < \mathbf{p_7} \vdash t_0 = s_5(\mathbf{p_7}, t_0) + (s_6(\mathbf{p_7}, t_0) * \mathbf{p_7})$

(C542) $\mathbf{0} < \mathbf{p_7}, s_5(\mathbf{p_7}, t_0) = \mathbf{0} \vdash t_0 = \mathbf{0} + (s_6(\mathbf{p_7}, t_0) * \mathbf{p_7})$

(C543) $\mathbf{0} < \mathbf{p_7} \vdash s_5(\mathbf{p_7}, t_0) < \mathbf{p_7}$

(C557) $\mathbf{0} < \mathbf{p_8} \vdash \mathbf{p_8} = s_7(\mathbf{p_8}) + \mathbf{1}$

(C558) $\mathbf{0} < \mathbf{p_8} \vdash t_0 = s_5(\mathbf{p_8}, t_0) + (s_6(\mathbf{p_8}, t_0) * \mathbf{p_8})$

(C559) $\mathbf{0} < \mathbf{p_8}, s_5(\mathbf{p_8}, t_0) = \mathbf{0} \vdash t_0 = \mathbf{0} + (s_6(\mathbf{p_8}, t_0) * \mathbf{p_8})$

(C560) $\mathbf{0} < \mathbf{p_8} \vdash s_5(\mathbf{p_8}, t_0) < \mathbf{p_8}$

(C574) $\mathbf{0} < \mathbf{p_9} \vdash \mathbf{p_9} = s_7(\mathbf{p_9}) + \mathbf{1}$

(C575) $\mathbf{0} < \mathbf{p_9} \vdash t_0 = s_5(\mathbf{p_9}, t_0) + (s_6(\mathbf{p_9}, t_0) * \mathbf{p_9})$

(C576) $\mathbf{0} < \mathbf{p_9}, s_5(\mathbf{p_9}, t_0) = \mathbf{0} \vdash t_0 = \mathbf{0} + (s_6(\mathbf{p_9}, t_0) * \mathbf{p_9})$

(C577) $\mathbf{0} < \mathbf{p_9} \vdash s_5(\mathbf{p_9}, t_0) < \mathbf{p_9}$

(C591) $\mathbf{0} < \mathbf{p_{10}} \vdash \mathbf{p_{10}} = s_7(\mathbf{p_{10}}) + \mathbf{1}$

(C592) $\mathbf{0} < \mathbf{p_{10}} \vdash t_0 = s_5(\mathbf{p_{10}}, t_0) + (s_6(\mathbf{p_{10}}, t_0) * \mathbf{p_{10}})$

(C593) $\mathbf{0} < \mathbf{p_{10}}, s_5(\mathbf{p_{10}}, t_0) = \mathbf{0} \vdash t_0 = \mathbf{0} + (s_6(\mathbf{p_{10}}, t_0) * \mathbf{p_{10}})$

(C594) $\mathbf{0} < \mathbf{p_{10}} \vdash s_5(\mathbf{p_{10}}, t_0) < \mathbf{p_{10}}$

(C608) $\mathbf{0} < \mathbf{p_{11}} \vdash \mathbf{p_{11}} = s_7(\mathbf{p_{11}}) + \mathbf{1}$

(C609) $\mathbf{0} < \mathbf{p_{11}} \vdash t_0 = s_5(\mathbf{p_{11}}, t_0) + (s_6(\mathbf{p_{11}}, t_0) * \mathbf{p_{11}})$

(C610) $\mathbf{0} < \mathbf{p_{11}}, s_5(\mathbf{p_{11}}, t_0) = \mathbf{0} \vdash t_0 = \mathbf{0} + (s_6(\mathbf{p_{11}}, t_0) * \mathbf{p_{11}})$

(C611) $\mathbf{0} < \mathbf{p_{11}} \vdash s_5(\mathbf{p_{11}}, t_0) < \mathbf{p_{11}}$

(C625) $\mathbf{0} < \mathbf{p_{12}} \vdash \mathbf{p_{12}} = s_7(\mathbf{p_{12}}) + \mathbf{1}$

(C626) $\mathbf{0} < \mathbf{p_{12}} \vdash t_0 = s_5(\mathbf{p_{12}}, t_0) + (s_6(\mathbf{p_{12}}, t_0) * \mathbf{p_{12}})$

(C627) $\mathbf{0} < \mathbf{p_{12}}, s_5(\mathbf{p_{12}}, t_0) = \mathbf{0} \vdash t_0 = \mathbf{0} + (s_6(\mathbf{p_{12}}, t_0) * \mathbf{p_{12}})$

(C628) $\mathbf{0} < \mathbf{p_{12}} \vdash s_5(\mathbf{p_{12}}, t_0) < \mathbf{p_{12}}$

(C827) $t_0 = \mathbf{p_{12}}, nat_{53} * nat_{54} = t_0 \vdash nat_{53} = \mathbf{1}, nat_{53} = t_0$

(C828) $t_0 = \mathbf{p_{12}} \vdash \mathbf{1} < t_0$

(C829) $t_0 = \mathbf{p_{11}}, nat_{53} * nat_{54} = t_0 \vdash nat_{53} = \mathbf{1}, nat_{53} = t_0$

(C830) $t_0 = \mathbf{p_{11}} \vdash \mathbf{1} < t_0$

(C831) $t_0 = \mathbf{p_{10}}, nat_{53} * nat_{54} = t_0 \vdash nat_{53} = \mathbf{1}, nat_{53} = t_0$

(C832) $t_0 = \mathbf{p_{10}} \vdash \mathbf{1} < t_0$

(C833) $t_0 = \mathbf{p_9}, nat_{53} * nat_{54} = t_0 \vdash nat_{53} = \mathbf{1}, nat_{53} = t_0$

(C834) $t_0 = \mathbf{p_9} \vdash \mathbf{1} < t_0$

(C835) $t_0 = \mathbf{p_8}, nat_{53} * nat_{54} = t_0 \vdash nat_{53} = \mathbf{1}, nat_{53} = t_0$

(C836) $t_0 = \mathbf{p_8} \vdash \mathbf{1} < t_0$

(C837) $t_0 = \mathbf{p_7}, nat_{53} * nat_{54} = t_0 \vdash nat_{53} = \mathbf{1}, nat_{53} = t_0$

(C838) $t_0 = \mathbf{p_7} \vdash \mathbf{1} < t_0$

(C839) $t_0 = \mathbf{p_6}, nat_{53} * nat_{54} = t_0 \vdash nat_{53} = \mathbf{1}, nat_{53} = t_0$

(C840) $t_0 = \mathbf{p_6} \vdash \mathbf{1} < t_0$

(C841) $t_0 = \mathbf{p_5}, nat_{53} * nat_{54} = t_0 \vdash nat_{53} = \mathbf{1}, nat_{53} = t_0$

(C842) $t_0 = \mathbf{p_5} \vdash \mathbf{1} < t_0$

(C843) $t_0 = \mathbf{p_4}, nat_{53} * nat_{54} = t_0 \vdash nat_{53} = \mathbf{1}, nat_{53} = t_0$

(C844) $t_0 = \mathbf{p_4} \vdash \mathbf{1} < t_0$

(C845) $t_0 = \mathbf{p_3}, nat_{53} * nat_{54} = t_0 \vdash nat_{53} = \mathbf{1}, nat_{53} = t_0$

(C846) $t_0 = \mathbf{p_3} \vdash \mathbf{1} < t_0$

(C847) $t_0 = \mathbf{p_2}, nat_{53} * nat_{54} = t_0 \vdash nat_{53} = \mathbf{1}, nat_{53} = t_0$

(C848) $t_0 = \mathbf{p_2} \vdash \mathbf{1} < t_0$

(C849) $t_0 = \mathbf{p_1}, nat_{53} * nat_{54} = t_0 \vdash nat_{53} = \mathbf{1}, nat_{53} = t_0$

(C850) $t_0 = \mathbf{p_1} \vdash \mathbf{1} < t_0$

(C851) $t_0 = \mathbf{p_0}, nat_{53} * nat_{54} = t_0 \vdash nat_{53} = \mathbf{1}, nat_{53} = t_0$

(C852) $t_0 = \mathbf{p_0} \vdash \mathbf{1} < t_0$

(C880) $\vdash m_0 = \mathbf{1}, s_1(m_0) * s_4(m_0) = m_0$

(C883) $\vdash m_0 = \mathbf{1}, s_1(m_0) = \mathbf{p_0}, s_1(m_0) = \mathbf{p_1}, s_1(m_0) = \mathbf{p_2}, s_1(m_0) = \mathbf{p_3}, s_1(m_0) = \mathbf{p_4}, s_1(m_0) = \mathbf{p_5}, s_1(m_0) = \mathbf{p_6}, s_1(m_0) = \mathbf{p_7}, s_1(m_0) = \mathbf{p_8}, s_1(m_0) = \mathbf{p_9}, s_1(m_0) = \mathbf{p_{10}}, s_1(m_0) = \mathbf{p_{11}}, s_1(m_0) = \mathbf{p_{12}}$

(C886) $t_0 = \mathbf{p_{12}}, \mathbf{1} = n_0 * t_0 \vdash$

(C889) $t_0 = \mathbf{p_{11}}, \mathbf{1} = n_0 * t_0 \vdash$

(C892) $t_0 = \mathbf{p_{10}}, \mathbf{1} = n_0 * t_0 \vdash$

(C895) $t_0 = \mathbf{p_9}, \mathbf{1} = n_0 * t_0 \vdash$

(C898) $t_0 = \mathbf{p_8}, \mathbf{1} = n_0 * t_0 \vdash$

(C901) $t_0 = \mathbf{p_7}, \mathbf{1} = n_0 * t_0 \vdash$

(C904) $t_0 = \mathbf{p_6}, \mathbf{1} = n_0 * t_0 \vdash$

(C907) $t_0 = \mathbf{p_5}, \mathbf{1} = n_0 * t_0 \vdash$

(C910) $t_0 = \mathbf{p_4}, \mathbf{1} = n_0 * t_0 \vdash$

(C913) $t_0 = \mathbf{p_3}, \mathbf{1} = n_0 * t_0 \vdash$

(C916) $t_0 = \mathbf{p_2}, \mathbf{1} = n_0 * t_0 \vdash$

(C919) $t_0 = \mathbf{p_1}, \mathbf{1} = n_0 * t_0 \vdash$

(C922) $t_0 = \mathbf{p_0}, \mathbf{1} = n_0 * t_0 \vdash$

2 Subsumed

(C1) $\mathbf{1} + (l_0 + \mathbf{1}) = \mathbf{1} \vdash$ by (A13)

(C17) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_0 + \mathbf{1})) * (t_1 + \mathbf{1}))$
by (C72)

(C30) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_1 + \mathbf{1})) * (t_0 + \mathbf{1}))$
by (C84)

(C31) $\vdash (((t_0 + \mathbf{1}) * t_1) + t_0) + \mathbf{1} = (t_0 + \mathbf{1}) * (t_1 + \mathbf{1})$ by (C85)

(C72) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_0 + \mathbf{1})) * (t_1 + \mathbf{1}))$
by (C123)

(C84) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_1 + \mathbf{1})) * (t_0 + \mathbf{1}))$
by (C134)

(C85) $\vdash (((t_0 + \mathbf{1}) * t_1) + t_0) + \mathbf{1} = (t_0 + \mathbf{1}) * (t_1 + \mathbf{1})$ by (C135)

(C123) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_0 + \mathbf{1})) * (t_1 + \mathbf{1}))$
by (C170)

(C134) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_1 + \mathbf{1})) * (t_0 + \mathbf{1}))$
by (C180)

(C135) $\vdash (((t_0 + \mathbf{1}) * t_1) + t_0) + \mathbf{1} = (t_0 + \mathbf{1}) * (t_1 + \mathbf{1})$ by (C181)

(C170) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_0 + \mathbf{1})) * (t_1 + \mathbf{1}))$
by (C213)

(C180) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_1 + \mathbf{1})) * (t_0 + \mathbf{1}))$
by (C222)

(C181) $\vdash (((t_0 + \mathbf{1}) * t_1) + t_0) + \mathbf{1} = (t_0 + \mathbf{1}) * (t_1 + \mathbf{1})$ by (C223)

(C213) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_0 + \mathbf{1})) * (t_1 + \mathbf{1}))$ by (C252)

(C222) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_1 + \mathbf{1})) * (t_0 + \mathbf{1}))$ by (C260)

(C223) $\vdash (((t_0 + \mathbf{1}) * t_1) + t_0) + \mathbf{1} = (t_0 + \mathbf{1}) * (t_1 + \mathbf{1})$ by (C261)

(C252) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_0 + \mathbf{1})) * (t_1 + \mathbf{1}))$ by (C287)

(C260) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_1 + \mathbf{1})) * (t_0 + \mathbf{1}))$ by (C294)

(C261) $\vdash (((t_0 + \mathbf{1}) * t_1) + t_0) + \mathbf{1} = (t_0 + \mathbf{1}) * (t_1 + \mathbf{1})$ by (C295)

(C287) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_0 + \mathbf{1})) * (t_1 + \mathbf{1}))$ by (C318)

(C294) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_1 + \mathbf{1})) * (t_0 + \mathbf{1}))$ by (C324)

(C295) $\vdash (((t_0 + \mathbf{1}) * t_1) + t_0) + \mathbf{1} = (t_0 + \mathbf{1}) * (t_1 + \mathbf{1})$ by (C325)

(C318) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_0 + \mathbf{1})) * (t_1 + \mathbf{1}))$ by (C345)

(C324) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_1 + \mathbf{1})) * (t_0 + \mathbf{1}))$ by (C350)

(C325) $\vdash (((t_0 + \mathbf{1}) * t_1) + t_0) + \mathbf{1} = (t_0 + \mathbf{1}) * (t_1 + \mathbf{1})$ by (C351)

(C345) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_0 + \mathbf{1})) * (t_1 + \mathbf{1}))$ by (C368)

(C350) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_1 + \mathbf{1})) * (t_0 + \mathbf{1}))$ by (C372)

(C351) $\vdash (((t_0 + \mathbf{1}) * t_1) + t_0) + \mathbf{1} = (t_0 + \mathbf{1}) * (t_1 + \mathbf{1})$ by (C373)

(C368) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_0 + \mathbf{1})) * (t_1 + \mathbf{1}))$ by (C387)

(C372) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_1 + \mathbf{1})) * (t_0 + \mathbf{1}))$ by (C390)

(C373) $\vdash (((t_0 + \mathbf{1}) * t_1) + t_0) + \mathbf{1} = (t_0 + \mathbf{1}) * (t_1 + \mathbf{1})$ by (C391)

(C387) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_0 + \mathbf{1})) * (t_1 + \mathbf{1}))$ by (C402)

(C390) $m_0 = k_0 + (r_0 * ((t_0 + \mathbf{1}) * (t_1 + \mathbf{1}))) \vdash m_0 = k_0 + ((r_0 * (t_1 + \mathbf{1})) * (t_0 + \mathbf{1}))$ by (C404)

(C391) $\vdash (((t_0 + \mathbf{1}) * t_1) + t_0) + \mathbf{1} = (t_0 + \mathbf{1}) * (t_1 + \mathbf{1})$ by (C405)

(C416) $\mathbf{0} < \mathbf{p_0} \vdash (q_0 * \mathbf{p_0}) + (r_0 * \mathbf{p_0}) = (q_0 + r_0) * \mathbf{p_0}$ by (A23)

(C417) $\mathbf{0} < \mathbf{p_0} \vdash (i_0 + (q_0 * \mathbf{p_0})) + (r_0 * \mathbf{p_0}) = i_0 + ((q_0 * \mathbf{p_0}) + (r_0 * \mathbf{p_0}))$ by (A4)

(C425) $\mathbf{0} < i_0, \mathbf{0} < \mathbf{p_0}, i_0 < \mathbf{p_0}, i_0 + (q_0 * \mathbf{p_0}) = \mathbf{0} + (r_0 * \mathbf{p_0}) \vdash$ by (A29)

(C426) $i_0 < \mathbf{0}, \mathbf{0} < \mathbf{p_0}, i_0 < \mathbf{p_0}, i_0 + (q_0 * \mathbf{p_0}) = \mathbf{0} + (r_0 * \mathbf{p_0}) \vdash$ by (A28)

(C427) $\vdash i_0 = \mathbf{0}, i_0 < \mathbf{0}, \mathbf{0} < i_0$ by (A30)

(C429) $\mathbf{0} + \mathbf{1} < \mathbf{p_0} \vdash \mathbf{0} < \mathbf{p_0}$ by (A34)

(C430) $\vdash \mathbf{0} + \mathbf{1} = \mathbf{1}$ by (A6)

(C433) $\mathbf{0} < \mathbf{p_1} \vdash (q_0 * \mathbf{p_1}) + (r_0 * \mathbf{p_1}) = (q_0 + r_0) * \mathbf{p_1}$ by (A23)

(C434) $\mathbf{0} < \mathbf{p_1} \vdash (i_0 + (q_0 * \mathbf{p_1})) + (r_0 * \mathbf{p_1}) = i_0 + ((q_0 * \mathbf{p_1}) + (r_0 * \mathbf{p_1}))$ by (A4)

(C442) $\mathbf{0} < i_0, \mathbf{0} < \mathbf{p_1}, i_0 < \mathbf{p_1}, i_0 + (q_0 * \mathbf{p_1}) = \mathbf{0} + (r_0 * \mathbf{p_1}) \vdash$ by (A29)

(C443) $i_0 < \mathbf{0}, \mathbf{0} < \mathbf{p_1}, i_0 < \mathbf{p_1}, i_0 + (q_0 * \mathbf{p_1}) = \mathbf{0} + (r_0 * \mathbf{p_1}) \vdash$ by (A28)

(C444) $\vdash i_0 = \mathbf{0}, i_0 < \mathbf{0}, \mathbf{0} < i_0$ by (A30)

(C446) $\mathbf{0} + \mathbf{1} < \mathbf{p_1} \vdash \mathbf{0} < \mathbf{p_1}$ by (A34)

(C447) $\vdash \mathbf{0} + \mathbf{1} = \mathbf{1}$ by (A6)

(C450) $\mathbf{0} < \mathbf{p_2} \vdash (q_0 * \mathbf{p_2}) + (r_0 * \mathbf{p_2}) = (q_0 + r_0) * \mathbf{p_2}$ by (A23)

(C451) $\mathbf{0} < \mathbf{p_2} \vdash (i_0 + (q_0 * \mathbf{p_2})) + (r_0 * \mathbf{p_2}) = i_0 + ((q_0 * \mathbf{p_2}) + (r_0 * \mathbf{p_2}))$ by (A4)

(C459) $\mathbf{0} < i_0, \mathbf{0} < \mathbf{p_2}, i_0 < \mathbf{p_2}, i_0 + (q_0 * \mathbf{p_2}) = \mathbf{0} + (r_0 * \mathbf{p_2}) \vdash$ by (A29)

(C460) $i_0 < \mathbf{0}, \mathbf{0} < \mathbf{p_2}, i_0 < \mathbf{p_2}, i_0 + (q_0 * \mathbf{p_2}) = \mathbf{0} + (r_0 * \mathbf{p_2}) \vdash$ by (A28)

(C461) $\vdash i_0 = \mathbf{0}, i_0 < \mathbf{0}, \mathbf{0} < i_0$ by (A30)

(C463) $\mathbf{0} + \mathbf{1} < \mathbf{p_2} \vdash \mathbf{0} < \mathbf{p_2}$ by (A34)

(C464) $\vdash \mathbf{0} + \mathbf{1} = \mathbf{1}$ by (A6)

(C467) $\mathbf{0} < \mathbf{p_3} \vdash (q_0 * \mathbf{p_3}) + (r_0 * \mathbf{p_3}) = (q_0 + r_0) * \mathbf{p_3}$ by (A23)

(C468) $\mathbf{0} < \mathbf{p_3} \vdash (i_0 + (q_0 * \mathbf{p_3})) + (r_0 * \mathbf{p_3}) = i_0 + ((q_0 * \mathbf{p_3}) + (r_0 * \mathbf{p_3}))$ by (A4)

(C476) $\mathbf{0} < i_0, \mathbf{0} < \mathbf{p_3}, i_0 < \mathbf{p_3}, i_0 + (q_0 * \mathbf{p_3}) = \mathbf{0} + (r_0 * \mathbf{p_3}) \vdash$ by (A29)

(C477) $i_0 < \mathbf{0}, \mathbf{0} < \mathbf{p_3}, i_0 < \mathbf{p_3}, i_0 + (q_0 * \mathbf{p_3}) = \mathbf{0} + (r_0 * \mathbf{p_3}) \vdash$ by (A28)

(C478) $\vdash i_0 = \mathbf{0}, i_0 < \mathbf{0}, \mathbf{0} < i_0$ by (A30)

(C480) $\mathbf{0} + \mathbf{1} < \mathbf{p_3} \vdash \mathbf{0} < \mathbf{p_3}$ by (A34)

(C481) $\vdash \mathbf{0} + \mathbf{1} = \mathbf{1}$ by (A6)

(C484) $\mathbf{0} < \mathbf{p_4} \vdash (q_0 * \mathbf{p_4}) + (r_0 * \mathbf{p_4}) = (q_0 + r_0) * \mathbf{p_4}$ by (A23)

(C485) $\mathbf{0} < \mathbf{p_4} \vdash (i_0 + (q_0 * \mathbf{p_4})) + (r_0 * \mathbf{p_4}) = i_0 + ((q_0 * \mathbf{p_4}) + (r_0 * \mathbf{p_4}))$ by (A4)

(C493) $\mathbf{0} < i_0, \mathbf{0} < \mathbf{p_4}, i_0 < \mathbf{p_4}, i_0 + (q_0 * \mathbf{p_4}) = \mathbf{0} + (r_0 * \mathbf{p_4}) \vdash$ by (A29)

(C494) $i_0 < \mathbf{0}, \mathbf{0} < \mathbf{p_4}, i_0 < \mathbf{p_4}, i_0 + (q_0 * \mathbf{p_4}) = \mathbf{0} + (r_0 * \mathbf{p_4}) \vdash$ by (A28)

(C495) $\vdash i_0 = \mathbf{0}, i_0 < \mathbf{0}, \mathbf{0} < i_0$ by (A30)

(C497) $\mathbf{0} + \mathbf{1} < \mathbf{p_4} \vdash \mathbf{0} < \mathbf{p_4}$ by (A34)

(C498) $\vdash \mathbf{0} + \mathbf{1} = \mathbf{1}$ by (A6)

(C501) $\mathbf{0} < \mathbf{p_5} \vdash (q_0 * \mathbf{p_5}) + (r_0 * \mathbf{p_5}) = (q_0 + r_0) * \mathbf{p_5}$ by (A23)

(C502) $\mathbf{0} < \mathbf{p_5} \vdash (i_0 + (q_0 * \mathbf{p_5})) + (r_0 * \mathbf{p_5}) = i_0 + ((q_0 * \mathbf{p_5}) + (r_0 * \mathbf{p_5}))$ by (A4)

(C510) $\mathbf{0} < i_0, \mathbf{0} < \mathbf{p_5}, i_0 < \mathbf{p_5}, i_0 + (q_0 * \mathbf{p_5}) = \mathbf{0} + (r_0 * \mathbf{p_5}) \vdash$ by (A29)

(C511) $i_0 < \mathbf{0}, \mathbf{0} < \mathbf{p_5}, i_0 < \mathbf{p_5}, i_0 + (q_0 * \mathbf{p_5}) = \mathbf{0} + (r_0 * \mathbf{p_5}) \vdash$ by (A28)

(C512) $\vdash i_0 = \mathbf{0}, i_0 < \mathbf{0}, \mathbf{0} < i_0$ by (A30)

(C514) $\mathbf{0} + \mathbf{1} < \mathbf{p_5} \vdash \mathbf{0} < \mathbf{p_5}$ by (A34)

(C515) $\vdash \mathbf{0} + \mathbf{1} = \mathbf{1}$ by (A6)

(C518) $\mathbf{0} < \mathbf{p_6} \vdash (q_0 * \mathbf{p_6}) + (r_0 * \mathbf{p_6}) = (q_0 + r_0) * \mathbf{p_6}$ by (A23)

(C519) $\mathbf{0} < \mathbf{p_6} \vdash (i_0 + (q_0 * \mathbf{p_6})) + (r_0 * \mathbf{p_6}) = i_0 + ((q_0 * \mathbf{p_6}) + (r_0 * \mathbf{p_6}))$ by (A4)

(C527) $\mathbf{0} < i_0, \mathbf{0} < \mathbf{p_6}, i_0 < \mathbf{p_6}, i_0 + (q_0 * \mathbf{p_6}) = \mathbf{0} + (r_0 * \mathbf{p_6}) \vdash$ by (A29)

(C528) $i_0 < \mathbf{0}, \mathbf{0} < \mathbf{p_6}, i_0 < \mathbf{p_6}, i_0 + (q_0 * \mathbf{p_6}) = \mathbf{0} + (r_0 * \mathbf{p_6}) \vdash$ by (A28)

(C529) $\vdash i_0 = \mathbf{0}, i_0 < \mathbf{0}, \mathbf{0} < i_0$ by (A30)

(C531) $\mathbf{0} + \mathbf{1} < \mathbf{p_6} \vdash \mathbf{0} < \mathbf{p_6}$ by (A34)

(C532) $\vdash \mathbf{0} + \mathbf{1} = \mathbf{1}$ by (A6)

(C535) $\mathbf{0} < \mathbf{p_7} \vdash (q_0 * \mathbf{p_7}) + (r_0 * \mathbf{p_7}) = (q_0 + r_0) * \mathbf{p_7}$ by (A23)

(C536) $\mathbf{0} < \mathbf{p_7} \vdash (i_0 + (q_0 * \mathbf{p_7})) + (r_0 * \mathbf{p_7}) = i_0 + ((q_0 * \mathbf{p_7}) + (r_0 * \mathbf{p_7}))$ by (A4)

(C544) $\mathbf{0} < i_0, \mathbf{0} < \mathbf{p_7}, i_0 < \mathbf{p_7}, i_0 + (q_0 * \mathbf{p_7}) = \mathbf{0} + (r_0 * \mathbf{p_7}) \vdash$ by (A29)

(C545) $i_0 < \mathbf{0}, \mathbf{0} < \mathbf{p_7}, i_0 < \mathbf{p_7}, i_0 + (q_0 * \mathbf{p_7}) = \mathbf{0} + (r_0 * \mathbf{p_7}) \vdash$ by (A28)

(C546) $\vdash i_0 = \mathbf{0}, i_0 < \mathbf{0}, \mathbf{0} < i_0$ by (A30)

(C548) $\mathbf{0} + \mathbf{1} < \mathbf{p_7} \vdash \mathbf{0} < \mathbf{p_7}$ by (A34)

(C549) $\vdash \mathbf{0} + \mathbf{1} = \mathbf{1}$ by (A6)

(C552) $\mathbf{0} < \mathbf{p_8} \vdash (q_0 * \mathbf{p_8}) + (r_0 * \mathbf{p_8}) = (q_0 + r_0) * \mathbf{p_8}$ by (A23)

(C553) $\mathbf{0} < \mathbf{p_8} \vdash (i_0 + (q_0 * \mathbf{p_8})) + (r_0 * \mathbf{p_8}) = i_0 + ((q_0 * \mathbf{p_8}) + (r_0 * \mathbf{p_8}))$ by (A4)

(C561) $\mathbf{0} < i_0, \mathbf{0} < \mathbf{p_8}, i_0 < \mathbf{p_8}, i_0 + (q_0 * \mathbf{p_8}) = \mathbf{0} + (r_0 * \mathbf{p_8}) \vdash$ by (A29)

(C562) $i_0 < \mathbf{0}, \mathbf{0} < \mathbf{p_8}, i_0 < \mathbf{p_8}, i_0 + (q_0 * \mathbf{p_8}) = \mathbf{0} + (r_0 * \mathbf{p_8}) \vdash$ by (A28)

(C563) $\vdash i_0 = \mathbf{0}, i_0 < \mathbf{0}, \mathbf{0} < i_0$ by (A30)

(C565) $\mathbf{0 + 1 < p_8} \vdash \mathbf{0 < p_8}$ by (A34)

(C566) $\vdash \mathbf{0 + 1 = 1}$ by (A6)

(C569) $\mathbf{0 < p_9} \vdash (q_0 * \mathbf{p_9}) + (r_0 * \mathbf{p_9}) = (q_0 + r_0) * \mathbf{p_9}$ by (A23)

(C570) $\mathbf{0 < p_9} \vdash (i_0 + (q_0 * \mathbf{p_9})) + (r_0 * \mathbf{p_9}) = i_0 + ((q_0 * \mathbf{p_9}) + (r_0 * \mathbf{p_9}))$ by (A4)

(C578) $\mathbf{0} < i_0, \mathbf{0 < p_9}, i_0 < \mathbf{p_9}, i_0 + (q_0 * \mathbf{p_9}) = \mathbf{0} + (r_0 * \mathbf{p_9}) \vdash$ by (A29)

(C579) $i_0 < \mathbf{0}, \mathbf{0 < p_9}, i_0 < \mathbf{p_9}, i_0 + (q_0 * \mathbf{p_9}) = \mathbf{0} + (r_0 * \mathbf{p_9}) \vdash$ by (A28)

(C580) $\vdash i_0 = \mathbf{0}, i_0 < \mathbf{0}, \mathbf{0} < i_0$ by (A30)

(C582) $\mathbf{0 + 1 < p_9} \vdash \mathbf{0 < p_9}$ by (A34)

(C583) $\vdash \mathbf{0 + 1 = 1}$ by (A6)

(C586) $\mathbf{0 < p_{10}} \vdash (q_0 * \mathbf{p_{10}}) + (r_0 * \mathbf{p_{10}}) = (q_0 + r_0) * \mathbf{p_{10}}$ by (A23)

(C587) $\mathbf{0 < p_{10}} \vdash (i_0 + (q_0 * \mathbf{p_{10}})) + (r_0 * \mathbf{p_{10}}) = i_0 + ((q_0 * \mathbf{p_{10}}) + (r_0 * \mathbf{p_{10}}))$ by (A4)

(C595) $\mathbf{0} < i_0, \mathbf{0 < p_{10}}, i_0 < \mathbf{p_{10}}, i_0 + (q_0 * \mathbf{p_{10}}) = \mathbf{0} + (r_0 * \mathbf{p_{10}}) \vdash$ by (A29)

(C596) $i_0 < \mathbf{0}, \mathbf{0 < p_{10}}, i_0 < \mathbf{p_{10}}, i_0 + (q_0 * \mathbf{p_{10}}) = \mathbf{0} + (r_0 * \mathbf{p_{10}}) \vdash$ by (A28)

(C597) $\vdash i_0 = \mathbf{0}, i_0 < \mathbf{0}, \mathbf{0} < i_0$ by (A30)

(C599) $\mathbf{0 + 1 < p_{10}} \vdash \mathbf{0 < p_{10}}$ by (A34)

(C600) $\vdash \mathbf{0 + 1 = 1}$ by (A6)

(C603) $\mathbf{0 < p_{11}} \vdash (q_0 * \mathbf{p_{11}}) + (r_0 * \mathbf{p_{11}}) = (q_0 + r_0) * \mathbf{p_{11}}$ by (A23)

(C604) $\mathbf{0 < p_{11}} \vdash (i_0 + (q_0 * \mathbf{p_{11}})) + (r_0 * \mathbf{p_{11}}) = i_0 + ((q_0 * \mathbf{p_{11}}) + (r_0 * \mathbf{p_{11}}))$ by (A4)

(C612) $\mathbf{0} < i_0, \mathbf{0 < p_{11}}, i_0 < \mathbf{p_{11}}, i_0 + (q_0 * \mathbf{p_{11}}) = \mathbf{0} + (r_0 * \mathbf{p_{11}}) \vdash$ by (A29)

(C613) $i_0 < \mathbf{0}, \mathbf{0 < p_{11}}, i_0 < \mathbf{p_{11}}, i_0 + (q_0 * \mathbf{p_{11}}) = \mathbf{0} + (r_0 * \mathbf{p_{11}}) \vdash$ by (A28)

(C614) $\vdash i_0 = \mathbf{0}, i_0 < \mathbf{0}, \mathbf{0} < i_0$ by (A30)

(C616) $\mathbf{0 + 1 < p_{11}} \vdash \mathbf{0 < p_{11}}$ by (A34)

(C617) $\vdash \mathbf{0 + 1 = 1}$ by (A6)

(C620) $\mathbf{0 < p_{12}} \vdash (q_0 * \mathbf{p_{12}}) + (r_0 * \mathbf{p_{12}}) = (q_0 + r_0) * \mathbf{p_{12}}$ by (A23)

(C621) $\mathbf{0 < p_{12}} \vdash (i_0 + (q_0 * \mathbf{p_{12}})) + (r_0 * \mathbf{p_{12}}) = i_0 + ((q_0 * \mathbf{p_{12}}) + (r_0 * \mathbf{p_{12}}))$ by (A4)

(C629) $\mathbf{0} < i_0, \mathbf{0 < p_{12}}, i_0 < \mathbf{p_{12}}, i_0 + (q_0 * \mathbf{p_{12}}) = \mathbf{0} + (r_0 * \mathbf{p_{12}}) \vdash$ by (A29)

(C630) $i_0 < \mathbf{0}, \mathbf{0 < p_{12}}, i_0 < \mathbf{p_{12}}, i_0 + (q_0 * \mathbf{p_{12}}) = \mathbf{0} + (r_0 * \mathbf{p_{12}}) \vdash$ by (A28)

(C631) $\vdash i_0 = \mathbf{0}, i_0 < \mathbf{0}, \mathbf{0} < i_0$ by (A30)

(C633) $\mathbf{0 + 1 < p_{12}} \vdash \mathbf{0 < p_{12}}$ by (A34)

(C634) $\vdash \mathbf{0} + \mathbf{1} = \mathbf{1}$ by (A6)

(C881) $\vdash m_0 = \mathbf{1}, s_4(m_0) * s_1(m_0) = s_1(m_0) * s_4(m_0)$ by (A14)

(C882) $\vdash m_0 = \mathbf{1}, \mathbf{0} + (s_4(m_0) * s_1(m_0)) = s_4(m_0) * s_1(m_0)$ by (A6)

(C888) $t_0 = \mathbf{p_{12}} \vdash \mathbf{0} + (n_0 * t_0) = n_0 * t_0$ by (A6)

(C891) $t_0 = \mathbf{p_{11}} \vdash \mathbf{0} + (n_0 * t_0) = n_0 * t_0$ by (A6)

(C894) $t_0 = \mathbf{p_{10}} \vdash \mathbf{0} + (n_0 * t_0) = n_0 * t_0$ by (A6)

(C897) $t_0 = \mathbf{p_9} \vdash \mathbf{0} + (n_0 * t_0) = n_0 * t_0$ by (A6)

(C900) $t_0 = \mathbf{p_8} \vdash \mathbf{0} + (n_0 * t_0) = n_0 * t_0$ by (A6)

(C903) $t_0 = \mathbf{p_7} \vdash \mathbf{0} + (n_0 * t_0) = n_0 * t_0$ by (A6)

(C906) $t_0 = \mathbf{p_6} \vdash \mathbf{0} + (n_0 * t_0) = n_0 * t_0$ by (A6)

(C909) $t_0 = \mathbf{p_5} \vdash \mathbf{0} + (n_0 * t_0) = n_0 * t_0$ by (A6)

(C912) $t_0 = \mathbf{p_4} \vdash \mathbf{0} + (n_0 * t_0) = n_0 * t_0$ by (A6)

(C915) $t_0 = \mathbf{p_3} \vdash \mathbf{0} + (n_0 * t_0) = n_0 * t_0$ by (A6)

(C918) $t_0 = \mathbf{p_2} \vdash \mathbf{0} + (n_0 * t_0) = n_0 * t_0$ by (A6)

(C921) $t_0 = \mathbf{p_1} \vdash \mathbf{0} + (n_0 * t_0) = n_0 * t_0$ by (A6)

(C924) $t_0 = \mathbf{p_0} \vdash \mathbf{0} + (n_0 * t_0) = n_0 * t_0$ by (A6)

3 Clauses with Tautologies

(C2) $nat_2 + (nat_3 + \mathbf{1}) = \mathbf{1} \vdash nat_2 + (nat_3 + \mathbf{1}) = \mathbf{1}$

(C3) $nat_4 = \mathbf{1} \vdash nat_4 = \mathbf{1}$

(C4) $nat_7 = \mathbf{1} \vdash nat_7 = \mathbf{1}$

(C5) $nat_7 = nat_5 + (nat_8 * (nat_6 + \mathbf{1})) \vdash nat_7 = nat_5 + (nat_8 * (nat_6 + \mathbf{1}))$

(C6) $nat_5 = \mathbf{1} \vdash nat_5 = \mathbf{1}$

(C7) $m_0 + (n_0 + \mathbf{1}) \in x \vdash m_0 + (n_0 + \mathbf{1}) \in x$

(C8) $m_0 + (n_0 + \mathbf{1}) = k + (nat_1 * (l_0 + \mathbf{1})) \vdash m_0 + (n_0 + \mathbf{1}) = k + (nat_1 * (l_0 + \mathbf{1}))$

(C10) $k \in x \vdash k \in x$

(C11) $nat_{11} = \mathbf{1} \vdash nat_{11} = \mathbf{1}$

(C12) $nat_{11} = nat_9 + (nat_{12} * (nat_{10} + \mathbf{1})) \vdash nat_{11} = nat_9 + (nat_{12} * (nat_{10} + \mathbf{1}))$

(C13) $nat_9 = \mathbf{1} \vdash nat_9 = \mathbf{1}$

(C14) $n_0 = \mathbf{1} \vdash n_0 = \mathbf{1}$

(C15) $n_0 = \mathbf{1} \vdash n_0 = \mathbf{1}$

(C16) $m_0 = \mathbf{0} + (nat_{496} * \mathbf{p_{12}}) \vdash m_0 = \mathbf{0} + (nat_{496} * \mathbf{p_{12}})$

(C18) $m_0 = \mathbf{0} + (nat_{495} * \mathbf{p_{11}}) \vdash m_0 = \mathbf{0} + (nat_{495} * \mathbf{p_{11}})$

(C19) $m_0 = \mathbf{0} + (nat_{494} * \mathbf{p_{10}}) \vdash m_0 = \mathbf{0} + (nat_{494} * \mathbf{p_{10}})$

(C20) $m_0 = \mathbf{0} + (nat_{493} * \mathbf{p_9}) \vdash m_0 = \mathbf{0} + (nat_{493} * \mathbf{p_9})$

(C21) $m_0 = \mathbf{0} + (nat_{492} * \mathbf{p_8}) \vdash m_0 = \mathbf{0} + (nat_{492} * \mathbf{p_8})$

(C22) $m_0 = \mathbf{0} + (nat_{491} * \mathbf{p_7}) \vdash m_0 = \mathbf{0} + (nat_{491} * \mathbf{p_7})$

(C23) $m_0 = \mathbf{0} + (nat_{490} * \mathbf{p_6}) \vdash m_0 = \mathbf{0} + (nat_{490} * \mathbf{p_6})$

(C24) $m_0 = \mathbf{0} + (nat_{489} * \mathbf{p_5}) \vdash m_0 = \mathbf{0} + (nat_{489} * \mathbf{p_5})$

(C25) $m_0 = \mathbf{0} + (nat_{488} * \mathbf{p_4}) \vdash m_0 = \mathbf{0} + (nat_{488} * \mathbf{p_4})$

(C26) $m_0 = \mathbf{0} + (nat_{487} * \mathbf{p_3}) \vdash m_0 = \mathbf{0} + (nat_{487} * \mathbf{p_3})$

(C27) $m_0 = \mathbf{0} + (nat_{486} * \mathbf{p_2}) \vdash m_0 = \mathbf{0} + (nat_{486} * \mathbf{p_2})$

(C28) $m_0 = \mathbf{0} + (nat_{485} * \mathbf{p_1}) \vdash m_0 = \mathbf{0} + (nat_{485} * \mathbf{p_1})$

(C29) $m_0 = \mathbf{0} + (nat_{484} * \mathbf{p_0}) \vdash m_0 = \mathbf{0} + (nat_{484} * \mathbf{p_0})$

(C32) $k_0 = \mathbf{0} + (nat_{483} * \mathbf{p_{12}}) \vdash k_0 = \mathbf{0} + (nat_{483} * \mathbf{p_{12}})$

(C33) $k_0 = \mathbf{0} + (nat_{482} * \mathbf{p_{11}}) \vdash k_0 = \mathbf{0} + (nat_{482} * \mathbf{p_{11}})$

(C34) $k_0 = \mathbf{0} + (nat_{481} * \mathbf{p_{10}}) \vdash k_0 = \mathbf{0} + (nat_{481} * \mathbf{p_{10}})$

(C35) $k_0 = \mathbf{0} + (nat_{480} * \mathbf{p_9}) \vdash k_0 = \mathbf{0} + (nat_{480} * \mathbf{p_9})$

(C36) $k_0 = \mathbf{0} + (nat_{479} * \mathbf{p_8}) \vdash k_0 = \mathbf{0} + (nat_{479} * \mathbf{p_8})$

(C37) $k_0 = \mathbf{0} + (nat_{478} * \mathbf{p_7}) \vdash k_0 = \mathbf{0} + (nat_{478} * \mathbf{p_7})$

(C38) $k_0 = \mathbf{0} + (nat_{477} * \mathbf{p_6}) \vdash k_0 = \mathbf{0} + (nat_{477} * \mathbf{p_6})$

(C39) $k_0 = \mathbf{0} + (nat_{476} * \mathbf{p_5}) \vdash k_0 = \mathbf{0} + (nat_{476} * \mathbf{p_5})$

(C40) $k_0 = \mathbf{0} + (nat_{475} * \mathbf{p_4}) \vdash k_0 = \mathbf{0} + (nat_{475} * \mathbf{p_4})$

(C41) $k_0 = \mathbf{0} + (nat_{474} * \mathbf{p_3}) \vdash k_0 = \mathbf{0} + (nat_{474} * \mathbf{p_3})$

(C42) $k_0 = \mathbf{0} + (nat_{473} * \mathbf{p_2}) \vdash k_0 = \mathbf{0} + (nat_{473} * \mathbf{p_2})$

(C43) $k_0 = \mathbf{0} + (nat_{472} * \mathbf{p_1}) \vdash k_0 = \mathbf{0} + (nat_{472} * \mathbf{p_1})$

(C44) $k_0 = \mathbf{0} + (nat_{471} * \mathbf{p_0}) \vdash k_0 = \mathbf{0} + (nat_{471} * \mathbf{p_0})$

(C45) $n_0 = \mathbf{0} + (nat_{458} * \mathbf{p_{12}}) \vdash n_0 = \mathbf{0} + (nat_{458} * \mathbf{p_{12}})$

(C46) $n_0 = \mathbf{0} + (nat_{470} * \mathbf{p_{11}}) \vdash n_0 = \mathbf{0} + (nat_{470} * \mathbf{p_{11}})$

(C47) $n_0 = \mathbf{0} + (nat_{469} * \mathbf{p_{10}}) \vdash n_0 = \mathbf{0} + (nat_{469} * \mathbf{p_{10}})$

(C48) $n_0 = \mathbf{0} + (nat_{468} * \mathbf{p_9}) \vdash n_0 = \mathbf{0} + (nat_{468} * \mathbf{p_9})$

(C49) $n_0 = \mathbf{0} + (nat_{467} * \mathbf{p_8}) \vdash n_0 = \mathbf{0} + (nat_{467} * \mathbf{p_8})$

(C50) $n_0 = \mathbf{0} + (nat_{466} * \mathbf{p_7}) \vdash n_0 = \mathbf{0} + (nat_{466} * \mathbf{p_7})$

(C51) $n_0 = \mathbf{0} + (nat_{465} * \mathbf{p_6}) \vdash n_0 = \mathbf{0} + (nat_{465} * \mathbf{p_6})$

(C52) $n_0 = \mathbf{0} + (nat_{464} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{464} * \mathbf{p_5})$

(C53) $n_0 = \mathbf{0} + (nat_{463} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{463} * \mathbf{p_4})$

(C54) $n_0 = \mathbf{0} + (nat_{462} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{462} * \mathbf{p_3})$

(C55) $n_0 = \mathbf{0} + (nat_{461} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{461} * \mathbf{p_2})$

(C56) $n_0 = \mathbf{0} + (nat_{460} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{460} * \mathbf{p_1})$

(C57) $n_0 = \mathbf{0} + (nat_{459} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{459} * \mathbf{p_0})$

(C58) $n_0 = \mathbf{0} + (nat_{445} * \mathbf{p_{12}}) \vdash n_0 = \mathbf{0} + (nat_{445} * \mathbf{p_{12}})$

(C59) $n_0 = \mathbf{0} + (nat_{457} * \mathbf{p_{11}}) \vdash n_0 = \mathbf{0} + (nat_{457} * \mathbf{p_{11}})$

(C60) $n_0 = \mathbf{0} + (nat_{456} * \mathbf{p_{10}}) \vdash n_0 = \mathbf{0} + (nat_{456} * \mathbf{p_{10}})$

(C61) $n_0 = \mathbf{0} + (nat_{455} * \mathbf{p_9}) \vdash n_0 = \mathbf{0} + (nat_{455} * \mathbf{p_9})$

(C62) $n_0 = \mathbf{0} + (nat_{454} * \mathbf{p_8}) \vdash n_0 = \mathbf{0} + (nat_{454} * \mathbf{p_8})$

(C63) $n_0 = \mathbf{0} + (nat_{453} * \mathbf{p_7}) \vdash n_0 = \mathbf{0} + (nat_{453} * \mathbf{p_7})$

(C64) $n_0 = \mathbf{0} + (nat_{452} * \mathbf{p_6}) \vdash n_0 = \mathbf{0} + (nat_{452} * \mathbf{p_6})$

(C65) $n_0 = \mathbf{0} + (nat_{451} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{451} * \mathbf{p_5})$

(C66) $n_0 = \mathbf{0} + (nat_{450} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{450} * \mathbf{p_4})$

(C67) $n_0 = \mathbf{0} + (nat_{449} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{449} * \mathbf{p_3})$

(C68) $n_0 = \mathbf{0} + (nat_{448} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{448} * \mathbf{p_2})$

(C69) $n_0 = \mathbf{0} + (nat_{447} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{447} * \mathbf{p_1})$

(C70) $n_0 = \mathbf{0} + (nat_{446} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{446} * \mathbf{p_0})$

(C71) $m_0 = \mathbf{0} + (nat_{444} * \mathbf{p_{11}}) \vdash m_0 = \mathbf{0} + (nat_{444} * \mathbf{p_{11}})$

(C73) $m_0 = \mathbf{0} + (nat_{443} * \mathbf{p_{10}}) \vdash m_0 = \mathbf{0} + (nat_{443} * \mathbf{p_{10}})$

(C74) $m_0 = \mathbf{0} + (nat_{442} * \mathbf{p_9}) \vdash m_0 = \mathbf{0} + (nat_{442} * \mathbf{p_9})$

(C75) $m_0 = \mathbf{0} + (nat_{441} * \mathbf{p_8}) \vdash m_0 = \mathbf{0} + (nat_{441} * \mathbf{p_8})$

(C76) $m_0 = \mathbf{0} + (nat_{440} * \mathbf{p_7}) \vdash m_0 = \mathbf{0} + (nat_{440} * \mathbf{p_7})$

(C77) $m_0 = \mathbf{0} + (nat_{439} * \mathbf{p_6}) \vdash m_0 = \mathbf{0} + (nat_{439} * \mathbf{p_6})$

(C78) $m_0 = \mathbf{0} + (nat_{438} * \mathbf{p_5}) \vdash m_0 = \mathbf{0} + (nat_{438} * \mathbf{p_5})$

(C79) $m_0 = \mathbf{0} + (nat_{437} * \mathbf{p_4}) \vdash m_0 = \mathbf{0} + (nat_{437} * \mathbf{p_4})$

(C80) $m_0 = \mathbf{0} + (nat_{436} * \mathbf{p_3}) \vdash m_0 = \mathbf{0} + (nat_{436} * \mathbf{p_3})$

(C81) $m_0 = \mathbf{0} + (nat_{435} * \mathbf{p_2}) \vdash m_0 = \mathbf{0} + (nat_{435} * \mathbf{p_2})$

(C82) $m_0 = \mathbf{0} + (nat_{434} * \mathbf{p_1}) \vdash m_0 = \mathbf{0} + (nat_{434} * \mathbf{p_1})$

(C83) $m_0 = \mathbf{0} + (nat_{433} * \mathbf{p_0}) \vdash m_0 = \mathbf{0} + (nat_{433} * \mathbf{p_0})$

(C86) $k_0 = \mathbf{0} + (nat_{432} * \mathbf{p_{11}}) \vdash k_0 = \mathbf{0} + (nat_{432} * \mathbf{p_{11}})$

(C87) $k_0 = \mathbf{0} + (nat_{431} * \mathbf{p_{10}}) \vdash k_0 = \mathbf{0} + (nat_{431} * \mathbf{p_{10}})$

(C88) $k_0 = \mathbf{0} + (nat_{430} * \mathbf{p_9}) \vdash k_0 = \mathbf{0} + (nat_{430} * \mathbf{p_9})$

(C89) $k_0 = \mathbf{0} + (nat_{429} * \mathbf{p_8}) \vdash k_0 = \mathbf{0} + (nat_{429} * \mathbf{p_8})$

(C90) $k_0 = \mathbf{0} + (nat_{428} * \mathbf{p_7}) \vdash k_0 = \mathbf{0} + (nat_{428} * \mathbf{p_7})$

(C91) $k_0 = \mathbf{0} + (nat_{427} * \mathbf{p_6}) \vdash k_0 = \mathbf{0} + (nat_{427} * \mathbf{p_6})$

(C92) $k_0 = \mathbf{0} + (nat_{426} * \mathbf{p_5}) \vdash k_0 = \mathbf{0} + (nat_{426} * \mathbf{p_5})$

(C93) $k_0 = \mathbf{0} + (nat_{425} * \mathbf{p_4}) \vdash k_0 = \mathbf{0} + (nat_{425} * \mathbf{p_4})$

(C94) $k_0 = \mathbf{0} + (nat_{424} * \mathbf{p_3}) \vdash k_0 = \mathbf{0} + (nat_{424} * \mathbf{p_3})$

(C95) $k_0 = \mathbf{0} + (nat_{423} * \mathbf{p_2}) \vdash k_0 = \mathbf{0} + (nat_{423} * \mathbf{p_2})$

(C96) $k_0 = \mathbf{0} + (nat_{422} * \mathbf{p_1}) \vdash k_0 = \mathbf{0} + (nat_{422} * \mathbf{p_1})$

(C97) $k_0 = \mathbf{0} + (nat_{421} * \mathbf{p_0}) \vdash k_0 = \mathbf{0} + (nat_{421} * \mathbf{p_0})$

(C98) $n_0 = \mathbf{0} + (nat_{420} * \mathbf{p_{11}}) \vdash n_0 = \mathbf{0} + (nat_{420} * \mathbf{p_{11}})$

(C99) $n_0 = \mathbf{0} + (nat_{419} * \mathbf{p_{10}}) \vdash n_0 = \mathbf{0} + (nat_{419} * \mathbf{p_{10}})$

(C100) $n_0 = \mathbf{0} + (nat_{418} * \mathbf{p_9}) \vdash n_0 = \mathbf{0} + (nat_{418} * \mathbf{p_9})$

(C101) $n_0 = \mathbf{0} + (nat_{417} * \mathbf{p_8}) \vdash n_0 = \mathbf{0} + (nat_{417} * \mathbf{p_8})$

(C102) $n_0 = \mathbf{0} + (nat_{416} * \mathbf{p_7}) \vdash n_0 = \mathbf{0} + (nat_{416} * \mathbf{p_7})$

(C103) $n_0 = \mathbf{0} + (nat_{415} * \mathbf{p_6}) \vdash n_0 = \mathbf{0} + (nat_{415} * \mathbf{p_6})$

(C104) $n_0 = \mathbf{0} + (nat_{414} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{414} * \mathbf{p_5})$

(C105) $n_0 = \mathbf{0} + (nat_{413} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{413} * \mathbf{p_4})$

(C106) $n_0 = \mathbf{0} + (nat_{412} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{412} * \mathbf{p_3})$

(C107) $n_0 = \mathbf{0} + (nat_{411} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{411} * \mathbf{p_2})$

(C108) $n_0 = \mathbf{0} + (nat_{410} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{410} * \mathbf{p_1})$

(C109) $n_0 = \mathbf{0} + (nat_{409} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{409} * \mathbf{p_0})$

(C110) $n_0 = \mathbf{0} + (nat_{397} * \mathbf{p_{11}}) \vdash n_0 = \mathbf{0} + (nat_{397} * \mathbf{p_{11}})$

(C111) $n_0 = \mathbf{0} + (nat_{408} * \mathbf{p_{10}}) \vdash n_0 = \mathbf{0} + (nat_{408} * \mathbf{p_{10}})$

(C112) $n_0 = \mathbf{0} + (nat_{407} * \mathbf{p_9}) \vdash n_0 = \mathbf{0} + (nat_{407} * \mathbf{p_9})$

(C113) $n_0 = \mathbf{0} + (nat_{406} * \mathbf{p_8}) \vdash n_0 = \mathbf{0} + (nat_{406} * \mathbf{p_8})$

(C114) $n_0 = \mathbf{0} + (nat_{405} * \mathbf{p_7}) \vdash n_0 = \mathbf{0} + (nat_{405} * \mathbf{p_7})$

(C115) $n_0 = \mathbf{0} + (nat_{404} * \mathbf{p_6}) \vdash n_0 = \mathbf{0} + (nat_{404} * \mathbf{p_6})$

(C116) $n_0 = \mathbf{0} + (nat_{403} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{403} * \mathbf{p_5})$

(C117) $n_0 = \mathbf{0} + (nat_{402} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{402} * \mathbf{p_4})$

(C118) $n_0 = \mathbf{0} + (nat_{401} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{401} * \mathbf{p_3})$

(C119) $n_0 = \mathbf{0} + (nat_{400} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{400} * \mathbf{p_2})$

(C120) $n_0 = \mathbf{0} + (nat_{399} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{399} * \mathbf{p_1})$

(C121) $n_0 = \mathbf{0} + (nat_{398} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{398} * \mathbf{p_0})$

(C122) $m_0 = \mathbf{0} + (nat_{396} * \mathbf{p_{10}}) \vdash m_0 = \mathbf{0} + (nat_{396} * \mathbf{p_{10}})$

(C124) $m_0 = \mathbf{0} + (nat_{395} * \mathbf{p_9}) \vdash m_0 = \mathbf{0} + (nat_{395} * \mathbf{p_9})$

(C125) $m_0 = \mathbf{0} + (nat_{394} * \mathbf{p_8}) \vdash m_0 = \mathbf{0} + (nat_{394} * \mathbf{p_8})$

(C126) $m_0 = \mathbf{0} + (nat_{393} * \mathbf{p_7}) \vdash m_0 = \mathbf{0} + (nat_{393} * \mathbf{p_7})$

(C127) $m_0 = \mathbf{0} + (nat_{392} * \mathbf{p_6}) \vdash m_0 = \mathbf{0} + (nat_{392} * \mathbf{p_6})$

(C128) $m_0 = \mathbf{0} + (nat_{391} * \mathbf{p_5}) \vdash m_0 = \mathbf{0} + (nat_{391} * \mathbf{p_5})$

(C129) $m_0 = \mathbf{0} + (nat_{390} * \mathbf{p_4}) \vdash m_0 = \mathbf{0} + (nat_{390} * \mathbf{p_4})$

(C130) $m_0 = \mathbf{0} + (nat_{389} * \mathbf{p_3}) \vdash m_0 = \mathbf{0} + (nat_{389} * \mathbf{p_3})$

(C131) $m_0 = \mathbf{0} + (nat_{388} * \mathbf{p_2}) \vdash m_0 = \mathbf{0} + (nat_{388} * \mathbf{p_2})$

(C132) $m_0 = \mathbf{0} + (nat_{387} * \mathbf{p_1}) \vdash m_0 = \mathbf{0} + (nat_{387} * \mathbf{p_1})$

(C133) $m_0 = \mathbf{0} + (nat_{386} * \mathbf{p_0}) \vdash m_0 = \mathbf{0} + (nat_{386} * \mathbf{p_0})$

(C136) $k_0 = \mathbf{0} + (nat_{385} * \mathbf{p_{10}}) \vdash k_0 = \mathbf{0} + (nat_{385} * \mathbf{p_{10}})$

(C137) $k_0 = \mathbf{0} + (nat_{384} * \mathbf{p_9}) \vdash k_0 = \mathbf{0} + (nat_{384} * \mathbf{p_9})$

(C138) $k_0 = \mathbf{0} + (nat_{383} * \mathbf{p_8}) \vdash k_0 = \mathbf{0} + (nat_{383} * \mathbf{p_8})$

(C139) $k_0 = \mathbf{0} + (nat_{382} * \mathbf{p_7}) \vdash k_0 = \mathbf{0} + (nat_{382} * \mathbf{p_7})$

(C140) $k_0 = \mathbf{0} + (nat_{381} * \mathbf{p_6}) \vdash k_0 = \mathbf{0} + (nat_{381} * \mathbf{p_6})$

(C141) $k_0 = \mathbf{0} + (nat_{380} * \mathbf{p_5}) \vdash k_0 = \mathbf{0} + (nat_{380} * \mathbf{p_5})$

(C142) $k_0 = \mathbf{0} + (nat_{379} * \mathbf{p_4}) \vdash k_0 = \mathbf{0} + (nat_{379} * \mathbf{p_4})$

(C143) $k_0 = \mathbf{0} + (nat_{378} * \mathbf{p_3}) \vdash k_0 = \mathbf{0} + (nat_{378} * \mathbf{p_3})$

(C144) $k_0 = \mathbf{0} + (nat_{377} * \mathbf{p_2}) \vdash k_0 = \mathbf{0} + (nat_{377} * \mathbf{p_2})$

(C145) $k_0 = \mathbf{0} + (nat_{376} * \mathbf{p_1}) \vdash k_0 = \mathbf{0} + (nat_{376} * \mathbf{p_1})$

(C146) $k_0 = \mathbf{0} + (nat_{375} * \mathbf{p_0}) \vdash k_0 = \mathbf{0} + (nat_{375} * \mathbf{p_0})$

(C147) $n_0 = \mathbf{0} + (nat_{364} * \mathbf{p_{10}}) \vdash n_0 = \mathbf{0} + (nat_{364} * \mathbf{p_{10}})$

(C148) $n_0 = \mathbf{0} + (nat_{374} * \mathbf{p_9}) \vdash n_0 = \mathbf{0} + (nat_{374} * \mathbf{p_9})$

(C149) $n_0 = \mathbf{0} + (nat_{373} * \mathbf{p_8}) \vdash n_0 = \mathbf{0} + (nat_{373} * \mathbf{p_8})$

(C150) $n_0 = \mathbf{0} + (nat_{372} * \mathbf{p_7}) \vdash n_0 = \mathbf{0} + (nat_{372} * \mathbf{p_7})$

(C151) $n_0 = \mathbf{0} + (nat_{371} * \mathbf{p_6}) \vdash n_0 = \mathbf{0} + (nat_{371} * \mathbf{p_6})$

(C152) $n_0 = \mathbf{0} + (nat_{370} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{370} * \mathbf{p_5})$

(C153) $n_0 = \mathbf{0} + (nat_{369} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{369} * \mathbf{p_4})$

(C154) $n_0 = \mathbf{0} + (nat_{368} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{368} * \mathbf{p_3})$

(C155) $n_0 = \mathbf{0} + (nat_{367} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{367} * \mathbf{p_2})$

(C156) $n_0 = \mathbf{0} + (nat_{366} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{366} * \mathbf{p_1})$

(C157) $n_0 = \mathbf{0} + (nat_{365} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{365} * \mathbf{p_0})$

(C158) $n_0 = \mathbf{0} + (nat_{353} * \mathbf{p_{10}}) \vdash n_0 = \mathbf{0} + (nat_{353} * \mathbf{p_{10}})$

(C159) $n_0 = \mathbf{0} + (nat_{363} * \mathbf{p_9}) \vdash n_0 = \mathbf{0} + (nat_{363} * \mathbf{p_9})$

(C160) $n_0 = \mathbf{0} + (nat_{362} * \mathbf{p_8}) \vdash n_0 = \mathbf{0} + (nat_{362} * \mathbf{p_8})$

(C161) $n_0 = \mathbf{0} + (nat_{361} * \mathbf{p_7}) \vdash n_0 = \mathbf{0} + (nat_{361} * \mathbf{p_7})$

(C162) $n_0 = \mathbf{0} + (nat_{360} * \mathbf{p_6}) \vdash n_0 = \mathbf{0} + (nat_{360} * \mathbf{p_6})$

(C163) $n_0 = \mathbf{0} + (nat_{359} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{359} * \mathbf{p_5})$

(C164) $n_0 = \mathbf{0} + (nat_{358} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{358} * \mathbf{p_4})$

(C165) $n_0 = \mathbf{0} + (nat_{357} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{357} * \mathbf{p_3})$

(C166) $n_0 = \mathbf{0} + (nat_{356} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{356} * \mathbf{p_2})$

(C167) $n_0 = \mathbf{0} + (nat_{355} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{355} * \mathbf{p_1})$

(C168) $n_0 = \mathbf{0} + (nat_{354} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{354} * \mathbf{p_0})$

(C169) $m_0 = \mathbf{0} + (nat_{352} * \mathbf{p_9}) \vdash m_0 = \mathbf{0} + (nat_{352} * \mathbf{p_9})$

(C171) $m_0 = \mathbf{0} + (nat_{351} * \mathbf{p_8}) \vdash m_0 = \mathbf{0} + (nat_{351} * \mathbf{p_8})$

(C172) $m_0 = \mathbf{0} + (nat_{350} * \mathbf{p_7}) \vdash m_0 = \mathbf{0} + (nat_{350} * \mathbf{p_7})$

(C173) $m_0 = \mathbf{0} + (nat_{349} * \mathbf{p_6}) \vdash m_0 = \mathbf{0} + (nat_{349} * \mathbf{p_6})$

(C174) $m_0 = \mathbf{0} + (nat_{348} * \mathbf{p_5}) \vdash m_0 = \mathbf{0} + (nat_{348} * \mathbf{p_5})$

(C175) $m_0 = \mathbf{0} + (nat_{347} * \mathbf{p_4}) \vdash m_0 = \mathbf{0} + (nat_{347} * \mathbf{p_4})$

(C176) $m_0 = \mathbf{0} + (nat_{346} * \mathbf{p_3}) \vdash m_0 = \mathbf{0} + (nat_{346} * \mathbf{p_3})$

(C177) $m_0 = \mathbf{0} + (nat_{345} * \mathbf{p_2}) \vdash m_0 = \mathbf{0} + (nat_{345} * \mathbf{p_2})$

(C178) $m_0 = \mathbf{0} + (nat_{344} * \mathbf{p_1}) \vdash m_0 = \mathbf{0} + (nat_{344} * \mathbf{p_1})$

(C179) $m_0 = \mathbf{0} + (nat_{343} * \mathbf{p_0}) \vdash m_0 = \mathbf{0} + (nat_{343} * \mathbf{p_0})$

(C182) $k_0 = \mathbf{0} + (nat_{342} * \mathbf{p_9}) \vdash k_0 = \mathbf{0} + (nat_{342} * \mathbf{p_9})$

(C183) $k_0 = \mathbf{0} + (nat_{341} * \mathbf{p_8}) \vdash k_0 = \mathbf{0} + (nat_{341} * \mathbf{p_8})$

(C184) $k_0 = \mathbf{0} + (nat_{340} * \mathbf{p_7}) \vdash k_0 = \mathbf{0} + (nat_{340} * \mathbf{p_7})$

(C185) $k_0 = \mathbf{0} + (nat_{339} * \mathbf{p_6}) \vdash k_0 = \mathbf{0} + (nat_{339} * \mathbf{p_6})$

(C186) $k_0 = \mathbf{0} + (nat_{338} * \mathbf{p_5}) \vdash k_0 = \mathbf{0} + (nat_{338} * \mathbf{p_5})$

(C187) $k_0 = \mathbf{0} + (nat_{337} * \mathbf{p_4}) \vdash k_0 = \mathbf{0} + (nat_{337} * \mathbf{p_4})$

(C188) $k_0 = \mathbf{0} + (nat_{336} * \mathbf{p_3}) \vdash k_0 = \mathbf{0} + (nat_{336} * \mathbf{p_3})$

(C189) $k_0 = \mathbf{0} + (nat_{335} * \mathbf{p_2}) \vdash k_0 = \mathbf{0} + (nat_{335} * \mathbf{p_2})$

(C190) $k_0 = \mathbf{0} + (nat_{334} * \mathbf{p_1}) \vdash k_0 = \mathbf{0} + (nat_{334} * \mathbf{p_1})$

(C191) $k_0 = \mathbf{0} + (nat_{333} * \mathbf{p_0}) \vdash k_0 = \mathbf{0} + (nat_{333} * \mathbf{p_0})$

(C192) $n_0 = \mathbf{0} + (nat_{323} * \mathbf{p_9}) \vdash n_0 = \mathbf{0} + (nat_{323} * \mathbf{p_9})$

(C193) $n_0 = \mathbf{0} + (nat_{332} * \mathbf{p_8}) \vdash n_0 = \mathbf{0} + (nat_{332} * \mathbf{p_8})$

(C194) $n_0 = \mathbf{0} + (nat_{331} * \mathbf{p_7}) \vdash n_0 = \mathbf{0} + (nat_{331} * \mathbf{p_7})$

(C195) $n_0 = \mathbf{0} + (nat_{330} * \mathbf{p_6}) \vdash n_0 = \mathbf{0} + (nat_{330} * \mathbf{p_6})$

(C196) $n_0 = \mathbf{0} + (nat_{329} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{329} * \mathbf{p_5})$

(C197) $n_0 = \mathbf{0} + (nat_{328} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{328} * \mathbf{p_4})$

(C198) $n_0 = \mathbf{0} + (nat_{327} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{327} * \mathbf{p_3})$

(C199) $n_0 = \mathbf{0} + (nat_{326} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{326} * \mathbf{p_2})$

(C200) $n_0 = \mathbf{0} + (nat_{325} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{325} * \mathbf{p_1})$

(C201) $n_0 = \mathbf{0} + (nat_{324} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{324} * \mathbf{p_0})$

(C202) $n_0 = \mathbf{0} + (nat_{313} * \mathbf{p_9}) \vdash n_0 = \mathbf{0} + (nat_{313} * \mathbf{p_9})$

(C203) $n_0 = \mathbf{0} + (nat_{322} * \mathbf{p_8}) \vdash n_0 = \mathbf{0} + (nat_{322} * \mathbf{p_8})$

(C204) $n_0 = \mathbf{0} + (nat_{321} * \mathbf{p_7}) \vdash n_0 = \mathbf{0} + (nat_{321} * \mathbf{p_7})$

(C205) $n_0 = \mathbf{0} + (nat_{320} * \mathbf{p_6}) \vdash n_0 = \mathbf{0} + (nat_{320} * \mathbf{p_6})$

(C206) $n_0 = \mathbf{0} + (nat_{319} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{319} * \mathbf{p_5})$

(C207) $n_0 = \mathbf{0} + (nat_{318} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{318} * \mathbf{p_4})$

(C208) $n_0 = \mathbf{0} + (nat_{317} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{317} * \mathbf{p_3})$

(C209) $n_0 = \mathbf{0} + (nat_{316} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{316} * \mathbf{p_2})$

(C210) $n_0 = \mathbf{0} + (nat_{315} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{315} * \mathbf{p_1})$

(C211) $n_0 = \mathbf{0} + (nat_{314} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{314} * \mathbf{p_0})$

(C212) $m_0 = \mathbf{0} + (nat_{312} * \mathbf{p_8}) \vdash m_0 = \mathbf{0} + (nat_{312} * \mathbf{p_8})$

(C214) $m_0 = \mathbf{0} + (nat_{311} * \mathbf{p_7}) \vdash m_0 = \mathbf{0} + (nat_{311} * \mathbf{p_7})$

(C215) $m_0 = \mathbf{0} + (nat_{310} * \mathbf{p_6}) \vdash m_0 = \mathbf{0} + (nat_{310} * \mathbf{p_6})$

(C216) $m_0 = \mathbf{0} + (nat_{309} * \mathbf{p_5}) \vdash m_0 = \mathbf{0} + (nat_{309} * \mathbf{p_5})$

(C217) $m_0 = \mathbf{0} + (nat_{308} * \mathbf{p_4}) \vdash m_0 = \mathbf{0} + (nat_{308} * \mathbf{p_4})$

(C218) $m_0 = \mathbf{0} + (nat_{307} * \mathbf{p_3}) \vdash m_0 = \mathbf{0} + (nat_{307} * \mathbf{p_3})$

(C219) $m_0 = \mathbf{0} + (nat_{306} * \mathbf{p_2}) \vdash m_0 = \mathbf{0} + (nat_{306} * \mathbf{p_2})$

(C220) $m_0 = \mathbf{0} + (nat_{305} * \mathbf{p_1}) \vdash m_0 = \mathbf{0} + (nat_{305} * \mathbf{p_1})$

(C221) $m_0 = \mathbf{0} + (nat_{304} * \mathbf{p_0}) \vdash m_0 = \mathbf{0} + (nat_{304} * \mathbf{p_0})$

(C224) $k_0 = \mathbf{0} + (nat_{303} * \mathbf{p_8}) \vdash k_0 = \mathbf{0} + (nat_{303} * \mathbf{p_8})$

(C225) $k_0 = \mathbf{0} + (nat_{302} * \mathbf{p_7}) \vdash k_0 = \mathbf{0} + (nat_{302} * \mathbf{p_7})$

(C226) $k_0 = \mathbf{0} + (nat_{301} * \mathbf{p_6}) \vdash k_0 = \mathbf{0} + (nat_{301} * \mathbf{p_6})$

(C227) $k_0 = \mathbf{0} + (nat_{300} * \mathbf{p_5}) \vdash k_0 = \mathbf{0} + (nat_{300} * \mathbf{p_5})$

(C228) $k_0 = \mathbf{0} + (nat_{299} * \mathbf{p_4}) \vdash k_0 = \mathbf{0} + (nat_{299} * \mathbf{p_4})$

(C229) $k_0 = \mathbf{0} + (nat_{298} * \mathbf{p_3}) \vdash k_0 = \mathbf{0} + (nat_{298} * \mathbf{p_3})$

(C230) $k_0 = \mathbf{0} + (nat_{297} * \mathbf{p_2}) \vdash k_0 = \mathbf{0} + (nat_{297} * \mathbf{p_2})$

(C231) $k_0 = \mathbf{0} + (nat_{296} * \mathbf{p_1}) \vdash k_0 = \mathbf{0} + (nat_{296} * \mathbf{p_1})$

(C232) $k_0 = \mathbf{0} + (nat_{295} * \mathbf{p_0}) \vdash k_0 = \mathbf{0} + (nat_{295} * \mathbf{p_0})$

(C233) $n_0 = \mathbf{0} + (nat_{286} * \mathbf{p_8}) \vdash n_0 = \mathbf{0} + (nat_{286} * \mathbf{p_8})$

(C234) $n_0 = \mathbf{0} + (nat_{294} * \mathbf{p_7}) \vdash n_0 = \mathbf{0} + (nat_{294} * \mathbf{p_7})$

(C235) $n_0 = \mathbf{0} + (nat_{293} * \mathbf{p_6}) \vdash n_0 = \mathbf{0} + (nat_{293} * \mathbf{p_6})$

(C236) $n_0 = \mathbf{0} + (nat_{292} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{292} * \mathbf{p_5})$

(C237) $n_0 = \mathbf{0} + (nat_{291} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{291} * \mathbf{p_4})$

(C238) $n_0 = \mathbf{0} + (nat_{290} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{290} * \mathbf{p_3})$

(C239) $n_0 = \mathbf{0} + (nat_{289} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{289} * \mathbf{p_2})$

(C240) $n_0 = \mathbf{0} + (nat_{288} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{288} * \mathbf{p_1})$

(C241) $n_0 = \mathbf{0} + (nat_{287} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{287} * \mathbf{p_0})$

(C242) $n_0 = \mathbf{0} + (nat_{277} * \mathbf{p_8}) \vdash n_0 = \mathbf{0} + (nat_{277} * \mathbf{p_8})$

(C243) $n_0 = \mathbf{0} + (nat_{285} * \mathbf{p_7}) \vdash n_0 = \mathbf{0} + (nat_{285} * \mathbf{p_7})$

(C244) $n_0 = \mathbf{0} + (nat_{284} * \mathbf{p_6}) \vdash n_0 = \mathbf{0} + (nat_{284} * \mathbf{p_6})$

(C245) $n_0 = \mathbf{0} + (nat_{283} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{283} * \mathbf{p_5})$

(C246) $n_0 = \mathbf{0} + (nat_{282} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{282} * \mathbf{p_4})$

(C247) $n_0 = \mathbf{0} + (nat_{281} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{281} * \mathbf{p_3})$

(C248) $n_0 = \mathbf{0} + (nat_{280} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{280} * \mathbf{p_2})$

(C249) $n_0 = \mathbf{0} + (nat_{279} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{279} * \mathbf{p_1})$

(C250) $n_0 = \mathbf{0} + (nat_{278} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{278} * \mathbf{p_0})$

(C251) $m_0 = \mathbf{0} + (nat_{276} * \mathbf{p_7}) \vdash m_0 = \mathbf{0} + (nat_{276} * \mathbf{p_7})$

(C253) $m_0 = \mathbf{0} + (nat_{275} * \mathbf{p_6}) \vdash m_0 = \mathbf{0} + (nat_{275} * \mathbf{p_6})$

(C254) $m_0 = \mathbf{0} + (nat_{274} * \mathbf{p_5}) \vdash m_0 = \mathbf{0} + (nat_{274} * \mathbf{p_5})$

(C255) $m_0 = \mathbf{0} + (nat_{273} * \mathbf{p_4}) \vdash m_0 = \mathbf{0} + (nat_{273} * \mathbf{p_4})$

(C256) $m_0 = \mathbf{0} + (nat_{272} * \mathbf{p_3}) \vdash m_0 = \mathbf{0} + (nat_{272} * \mathbf{p_3})$

(C257) $m_0 = \mathbf{0} + (nat_{271} * \mathbf{p_2}) \vdash m_0 = \mathbf{0} + (nat_{271} * \mathbf{p_2})$

(C258) $m_0 = \mathbf{0} + (nat_{270} * \mathbf{p_1}) \vdash m_0 = \mathbf{0} + (nat_{270} * \mathbf{p_1})$

(C259) $m_0 = \mathbf{0} + (nat_{269} * \mathbf{p_0}) \vdash m_0 = \mathbf{0} + (nat_{269} * \mathbf{p_0})$

(C262) $k_0 = \mathbf{0} + (nat_{268} * \mathbf{p_7}) \vdash k_0 = \mathbf{0} + (nat_{268} * \mathbf{p_7})$

(C263) $k_0 = \mathbf{0} + (nat_{267} * \mathbf{p_6}) \vdash k_0 = \mathbf{0} + (nat_{267} * \mathbf{p_6})$

(C264) $k_0 = \mathbf{0} + (nat_{266} * \mathbf{p_5}) \vdash k_0 = \mathbf{0} + (nat_{266} * \mathbf{p_5})$

(C265) $k_0 = \mathbf{0} + (nat_{265} * \mathbf{p_4}) \vdash k_0 = \mathbf{0} + (nat_{265} * \mathbf{p_4})$

(C266) $k_0 = \mathbf{0} + (nat_{264} * \mathbf{p_3}) \vdash k_0 = \mathbf{0} + (nat_{264} * \mathbf{p_3})$

(C267) $k_0 = \mathbf{0} + (nat_{263} * \mathbf{p_2}) \vdash k_0 = \mathbf{0} + (nat_{263} * \mathbf{p_2})$

(C268) $k_0 = \mathbf{0} + (nat_{262} * \mathbf{p_1}) \vdash k_0 = \mathbf{0} + (nat_{262} * \mathbf{p_1})$

(C269) $k_0 = \mathbf{0} + (nat_{261} * \mathbf{p_0}) \vdash k_0 = \mathbf{0} + (nat_{261} * \mathbf{p_0})$

(C270) $n_0 = \mathbf{0} + (nat_{253} * \mathbf{p_7}) \vdash n_0 = \mathbf{0} + (nat_{253} * \mathbf{p_7})$

(C271) $n_0 = \mathbf{0} + (nat_{260} * \mathbf{p_6}) \vdash n_0 = \mathbf{0} + (nat_{260} * \mathbf{p_6})$

(C272) $n_0 = \mathbf{0} + (nat_{259} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{259} * \mathbf{p_5})$

(C273) $n_0 = \mathbf{0} + (nat_{258} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{258} * \mathbf{p_4})$

(C274) $n_0 = \mathbf{0} + (nat_{257} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{257} * \mathbf{p_3})$

(C275) $n_0 = \mathbf{0} + (nat_{256} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{256} * \mathbf{p_2})$

(C276) $n_0 = \mathbf{0} + (nat_{255} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{255} * \mathbf{p_1})$

(C277) $n_0 = \mathbf{0} + (nat_{254} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{254} * \mathbf{p_0})$

(C278) $n_0 = \mathbf{0} + (nat_{245} * \mathbf{p_7}) \vdash n_0 = \mathbf{0} + (nat_{245} * \mathbf{p_7})$

(C279) $n_0 = \mathbf{0} + (nat_{252} * \mathbf{p_6}) \vdash n_0 = \mathbf{0} + (nat_{252} * \mathbf{p_6})$

(C280) $n_0 = \mathbf{0} + (nat_{251} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{251} * \mathbf{p_5})$

(C281) $n_0 = \mathbf{0} + (nat_{250} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{250} * \mathbf{p_4})$

(C282) $n_0 = \mathbf{0} + (nat_{249} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{249} * \mathbf{p_3})$

(C283) $n_0 = \mathbf{0} + (nat_{248} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{248} * \mathbf{p_2})$

(C284) $n_0 = \mathbf{0} + (nat_{247} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{247} * \mathbf{p_1})$

(C285) $n_0 = \mathbf{0} + (nat_{246} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{246} * \mathbf{p_0})$

(C286) $m_0 = \mathbf{0} + (nat_{244} * \mathbf{p_6}) \vdash m_0 = \mathbf{0} + (nat_{244} * \mathbf{p_6})$

(C288) $m_0 = \mathbf{0} + (nat_{243} * \mathbf{p_5}) \vdash m_0 = \mathbf{0} + (nat_{243} * \mathbf{p_5})$

(C289) $m_0 = \mathbf{0} + (nat_{242} * \mathbf{p_4}) \vdash m_0 = \mathbf{0} + (nat_{242} * \mathbf{p_4})$

(C290) $m_0 = \mathbf{0} + (nat_{241} * \mathbf{p_3}) \vdash m_0 = \mathbf{0} + (nat_{241} * \mathbf{p_3})$

(C291) $m_0 = \mathbf{0} + (nat_{240} * \mathbf{p_2}) \vdash m_0 = \mathbf{0} + (nat_{240} * \mathbf{p_2})$

(C292) $m_0 = \mathbf{0} + (nat_{239} * \mathbf{p_1}) \vdash m_0 = \mathbf{0} + (nat_{239} * \mathbf{p_1})$

(C293) $m_0 = \mathbf{0} + (nat_{238} * \mathbf{p_0}) \vdash m_0 = \mathbf{0} + (nat_{238} * \mathbf{p_0})$

(C296) $k_0 = \mathbf{0} + (nat_{237} * \mathbf{p_6}) \vdash k_0 = \mathbf{0} + (nat_{237} * \mathbf{p_6})$

(C297) $k_0 = \mathbf{0} + (nat_{236} * \mathbf{p_5}) \vdash k_0 = \mathbf{0} + (nat_{236} * \mathbf{p_5})$

(C298) $k_0 = \mathbf{0} + (nat_{235} * \mathbf{p_4}) \vdash k_0 = \mathbf{0} + (nat_{235} * \mathbf{p_4})$

(C299) $k_0 = \mathbf{0} + (nat_{234} * \mathbf{p_3}) \vdash k_0 = \mathbf{0} + (nat_{234} * \mathbf{p_3})$

(C300) $k_0 = \mathbf{0} + (nat_{233} * \mathbf{p_2}) \vdash k_0 = \mathbf{0} + (nat_{233} * \mathbf{p_2})$

(C301) $k_0 = \mathbf{0} + (nat_{232} * \mathbf{p_1}) \vdash k_0 = \mathbf{0} + (nat_{232} * \mathbf{p_1})$

(C302) $k_0 = \mathbf{0} + (nat_{231} * \mathbf{p_0}) \vdash k_0 = \mathbf{0} + (nat_{231} * \mathbf{p_0})$

(C303) $n_0 = \mathbf{0} + (nat_{230} * \mathbf{p_6}) \vdash n_0 = \mathbf{0} + (nat_{230} * \mathbf{p_6})$

(C304) $n_0 = \mathbf{0} + (nat_{229} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{229} * \mathbf{p_5})$

(C305) $n_0 = \mathbf{0} + (nat_{228} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{228} * \mathbf{p_4})$

(C306) $n_0 = \mathbf{0} + (nat_{227} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{227} * \mathbf{p_3})$

(C307) $n_0 = \mathbf{0} + (nat_{226} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{226} * \mathbf{p_2})$

(C308) $n_0 = \mathbf{0} + (nat_{225} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{225} * \mathbf{p_1})$

(C309) $n_0 = \mathbf{0} + (nat_{224} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{224} * \mathbf{p_0})$

(C310) $n_0 = \mathbf{0} + (nat_{217} * \mathbf{p_6}) \vdash n_0 = \mathbf{0} + (nat_{217} * \mathbf{p_6})$

(C311) $n_0 = \mathbf{0} + (nat_{223} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{223} * \mathbf{p_5})$

(C312) $n_0 = \mathbf{0} + (nat_{222} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{222} * \mathbf{p_4})$

(C313) $n_0 = \mathbf{0} + (nat_{221} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{221} * \mathbf{p_3})$

(C314) $n_0 = \mathbf{0} + (nat_{220} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{220} * \mathbf{p_2})$

(C315) $n_0 = \mathbf{0} + (nat_{219} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{219} * \mathbf{p_1})$

(C316) $n_0 = \mathbf{0} + (nat_{218} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{218} * \mathbf{p_0})$

(C317) $m_0 = \mathbf{0} + (nat_{216} * \mathbf{p_5}) \vdash m_0 = \mathbf{0} + (nat_{216} * \mathbf{p_5})$

(C319) $m_0 = \mathbf{0} + (nat_{215} * \mathbf{p_4}) \vdash m_0 = \mathbf{0} + (nat_{215} * \mathbf{p_4})$

(C320) $m_0 = \mathbf{0} + (nat_{214} * \mathbf{p_3}) \vdash m_0 = \mathbf{0} + (nat_{214} * \mathbf{p_3})$

(C321) $m_0 = \mathbf{0} + (nat_{213} * \mathbf{p_2}) \vdash m_0 = \mathbf{0} + (nat_{213} * \mathbf{p_2})$

(C322) $m_0 = \mathbf{0} + (nat_{212} * \mathbf{p_1}) \vdash m_0 = \mathbf{0} + (nat_{212} * \mathbf{p_1})$

(C323) $m_0 = \mathbf{0} + (nat_{211} * \mathbf{p_0}) \vdash m_0 = \mathbf{0} + (nat_{211} * \mathbf{p_0})$

(C326) $k_0 = \mathbf{0} + (nat_{210} * \mathbf{p_5}) \vdash k_0 = \mathbf{0} + (nat_{210} * \mathbf{p_5})$

(C327) $k_0 = \mathbf{0} + (nat_{209} * \mathbf{p_4}) \vdash k_0 = \mathbf{0} + (nat_{209} * \mathbf{p_4})$

(C328) $k_0 = \mathbf{0} + (nat_{208} * \mathbf{p_3}) \vdash k_0 = \mathbf{0} + (nat_{208} * \mathbf{p_3})$

(C329) $k_0 = \mathbf{0} + (nat_{207} * \mathbf{p_2}) \vdash k_0 = \mathbf{0} + (nat_{207} * \mathbf{p_2})$

(C330) $k_0 = \mathbf{0} + (nat_{206} * \mathbf{p_1}) \vdash k_0 = \mathbf{0} + (nat_{206} * \mathbf{p_1})$

(C331) $k_0 = \mathbf{0} + (nat_{205} * \mathbf{p_0}) \vdash k_0 = \mathbf{0} + (nat_{205} * \mathbf{p_0})$

(C332) $n_0 = \mathbf{0} + (nat_{204} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{204} * \mathbf{p_5})$

(C333) $n_0 = \mathbf{0} + (nat_{203} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{203} * \mathbf{p_4})$

(C334) $n_0 = \mathbf{0} + (nat_{202} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{202} * \mathbf{p_3})$

(C335) $n_0 = \mathbf{0} + (nat_{201} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{201} * \mathbf{p_2})$

(C336) $n_0 = \mathbf{0} + (nat_{200} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{200} * \mathbf{p_1})$

(C337) $n_0 = \mathbf{0} + (nat_{199} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{199} * \mathbf{p_0})$

(C338) $n_0 = \mathbf{0} + (nat_{193} * \mathbf{p_5}) \vdash n_0 = \mathbf{0} + (nat_{193} * \mathbf{p_5})$

(C339) $n_0 = \mathbf{0} + (nat_{198} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{198} * \mathbf{p_4})$

(C340) $n_0 = \mathbf{0} + (nat_{197} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{197} * \mathbf{p_3})$

(C341) $n_0 = \mathbf{0} + (nat_{196} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{196} * \mathbf{p_2})$

(C342) $n_0 = \mathbf{0} + (nat_{195} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{195} * \mathbf{p_1})$

(C343) $n_0 = \mathbf{0} + (nat_{194} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{194} * \mathbf{p_0})$

(C344) $m_0 = \mathbf{0} + (nat_{192} * \mathbf{p_4}) \vdash m_0 = \mathbf{0} + (nat_{192} * \mathbf{p_4})$

(C346) $m_0 = \mathbf{0} + (nat_{191} * \mathbf{p_3}) \vdash m_0 = \mathbf{0} + (nat_{191} * \mathbf{p_3})$

(C347) $m_0 = \mathbf{0} + (nat_{190} * \mathbf{p_2}) \vdash m_0 = \mathbf{0} + (nat_{190} * \mathbf{p_2})$

(C348) $m_0 = \mathbf{0} + (nat_{189} * \mathbf{p_1}) \vdash m_0 = \mathbf{0} + (nat_{189} * \mathbf{p_1})$

(C349) $m_0 = \mathbf{0} + (nat_{188} * \mathbf{p_0}) \vdash m_0 = \mathbf{0} + (nat_{188} * \mathbf{p_0})$

(C352) $k_0 = \mathbf{0} + (nat_{187} * \mathbf{p_4}) \vdash k_0 = \mathbf{0} + (nat_{187} * \mathbf{p_4})$

(C353) $k_0 = \mathbf{0} + (nat_{186} * \mathbf{p_3}) \vdash k_0 = \mathbf{0} + (nat_{186} * \mathbf{p_3})$

(C354) $k_0 = \mathbf{0} + (nat_{185} * \mathbf{p_2}) \vdash k_0 = \mathbf{0} + (nat_{185} * \mathbf{p_2})$

(C355) $k_0 = \mathbf{0} + (nat_{184} * \mathbf{p_1}) \vdash k_0 = \mathbf{0} + (nat_{184} * \mathbf{p_1})$

(C356) $k_0 = \mathbf{0} + (nat_{183} * \mathbf{p_0}) \vdash k_0 = \mathbf{0} + (nat_{183} * \mathbf{p_0})$

(C357) $n_0 = \mathbf{0} + (nat_{182} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{182} * \mathbf{p_4})$

(C358) $n_0 = \mathbf{0} + (nat_{181} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{181} * \mathbf{p_3})$

(C359) $n_0 = \mathbf{0} + (nat_{180} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{180} * \mathbf{p_2})$

(C360) $n_0 = \mathbf{0} + (nat_{179} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{179} * \mathbf{p_1})$

(C361) $n_0 = \mathbf{0} + (nat_{178} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{178} * \mathbf{p_0})$

(C362) $n_0 = \mathbf{0} + (nat_{173} * \mathbf{p_4}) \vdash n_0 = \mathbf{0} + (nat_{173} * \mathbf{p_4})$

(C363) $n_0 = \mathbf{0} + (nat_{177} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{177} * \mathbf{p_3})$

(C364) $n_0 = \mathbf{0} + (nat_{176} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{176} * \mathbf{p_2})$

(C365) $n_0 = \mathbf{0} + (nat_{175} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{175} * \mathbf{p_1})$

(C366) $n_0 = \mathbf{0} + (nat_{174} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{174} * \mathbf{p_0})$

(C367) $m_0 = \mathbf{0} + (nat_{172} * \mathbf{p_3}) \vdash m_0 = \mathbf{0} + (nat_{172} * \mathbf{p_3})$

(C369) $m_0 = \mathbf{0} + (nat_{171} * \mathbf{p_2}) \vdash m_0 = \mathbf{0} + (nat_{171} * \mathbf{p_2})$

(C370) $m_0 = \mathbf{0} + (nat_{170} * \mathbf{p_1}) \vdash m_0 = \mathbf{0} + (nat_{170} * \mathbf{p_1})$

(C371) $m_0 = \mathbf{0} + (nat_{169} * \mathbf{p_0}) \vdash m_0 = \mathbf{0} + (nat_{169} * \mathbf{p_0})$

(C374) $k_0 = \mathbf{0} + (nat_{168} * \mathbf{p_3}) \vdash k_0 = \mathbf{0} + (nat_{168} * \mathbf{p_3})$

(C375) $k_0 = \mathbf{0} + (nat_{167} * \mathbf{p_2}) \vdash k_0 = \mathbf{0} + (nat_{167} * \mathbf{p_2})$

(C376) $k_0 = \mathbf{0} + (nat_{166} * \mathbf{p_1}) \vdash k_0 = \mathbf{0} + (nat_{166} * \mathbf{p_1})$

(C377) $k_0 = \mathbf{0} + (nat_{165} * \mathbf{p_0}) \vdash k_0 = \mathbf{0} + (nat_{165} * \mathbf{p_0})$

(C378) $n_0 = \mathbf{0} + (nat_{164} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{164} * \mathbf{p_3})$

(C379) $n_0 = \mathbf{0} + (nat_{163} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{163} * \mathbf{p_2})$

(C380) $n_0 = \mathbf{0} + (nat_{162} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{162} * \mathbf{p_1})$

(C381) $n_0 = \mathbf{0} + (nat_{161} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{161} * \mathbf{p_0})$

(C382) $n_0 = \mathbf{0} + (nat_{157} * \mathbf{p_3}) \vdash n_0 = \mathbf{0} + (nat_{157} * \mathbf{p_3})$

(C383) $n_0 = \mathbf{0} + (nat_{160} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{160} * \mathbf{p_2})$

(C384) $n_0 = \mathbf{0} + (nat_{159} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{159} * \mathbf{p_1})$

(C385) $n_0 = \mathbf{0} + (nat_{158} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{158} * \mathbf{p_0})$

(C386) $m_0 = \mathbf{0} + (nat_{156} * \mathbf{p_2}) \vdash m_0 = \mathbf{0} + (nat_{156} * \mathbf{p_2})$

(C388) $m_0 = \mathbf{0} + (nat_{155} * \mathbf{p_1}) \vdash m_0 = \mathbf{0} + (nat_{155} * \mathbf{p_1})$

(C389) $m_0 = \mathbf{0} + (nat_{154} * \mathbf{p_0}) \vdash m_0 = \mathbf{0} + (nat_{154} * \mathbf{p_0})$

(C392) $k_0 = \mathbf{0} + (nat_{153} * \mathbf{p_2}) \vdash k_0 = \mathbf{0} + (nat_{153} * \mathbf{p_2})$

(C393) $k_0 = \mathbf{0} + (nat_{152} * \mathbf{p_1}) \vdash k_0 = \mathbf{0} + (nat_{152} * \mathbf{p_1})$

(C394) $k_0 = \mathbf{0} + (nat_{151} * \mathbf{p_0}) \vdash k_0 = \mathbf{0} + (nat_{151} * \mathbf{p_0})$

(C395) $n_0 = \mathbf{0} + (nat_{148} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{148} * \mathbf{p_2})$

(C396) $n_0 = \mathbf{0} + (nat_{150} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{150} * \mathbf{p_1})$

(C397) $n_0 = \mathbf{0} + (nat_{149} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{149} * \mathbf{p_0})$

(C398) $n_0 = \mathbf{0} + (nat_{145} * \mathbf{p_2}) \vdash n_0 = \mathbf{0} + (nat_{145} * \mathbf{p_2})$

(C399) $n_0 = \mathbf{0} + (nat_{147} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{147} * \mathbf{p_1})$

(C400) $n_0 = \mathbf{0} + (nat_{146} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{146} * \mathbf{p_0})$

(C401) $m_0 = \mathbf{0} + (nat_{144} * \mathbf{p_1}) \vdash m_0 = \mathbf{0} + (nat_{144} * \mathbf{p_1})$

(C403) $m_0 = \mathbf{0} + (nat_{143} * \mathbf{p_0}) \vdash m_0 = \mathbf{0} + (nat_{143} * \mathbf{p_0})$

(C406) $k_0 = \mathbf{0} + (nat_{142} * \mathbf{p_1}) \vdash k_0 = \mathbf{0} + (nat_{142} * \mathbf{p_1})$

(C407) $k_0 = \mathbf{0} + (nat_{141} * \mathbf{p_0}) \vdash k_0 = \mathbf{0} + (nat_{141} * \mathbf{p_0})$

(C408) $n_0 = \mathbf{0} + (nat_{140} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{140} * \mathbf{p_1})$

(C409) $n_0 = \mathbf{0} + (nat_{139} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{139} * \mathbf{p_0})$

(C410) $n_0 = \mathbf{0} + (nat_{137} * \mathbf{p_1}) \vdash n_0 = \mathbf{0} + (nat_{137} * \mathbf{p_1})$

(C411) $n_0 = \mathbf{0} + (nat_{138} * \mathbf{p_0}) \vdash n_0 = \mathbf{0} + (nat_{138} * \mathbf{p_0})$

(C412) $nat_{134} = \mathbf{0} + (nat_{136} * \mathbf{p_0}) \vdash nat_{134} = \mathbf{0} + (nat_{136} * \mathbf{p_0})$

(C413) $nat_{134} = nat_{131} + (nat_{135} * (nat_{133} + \mathbf{1})) \vdash nat_{134} = nat_{131} + (nat_{135} * (nat_{133} + \mathbf{1}))$

(C414) $nat_{131} = \mathbf{0} + (nat_{132} * \mathbf{p_0}) \vdash nat_{131} = \mathbf{0} + (nat_{132} * \mathbf{p_0})$

(C415) $\mathbf{0} < \mathbf{p_0}, t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_0}) \vdash t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_0})$

(C418) $\mathbf{0} < \mathbf{p_0}, m_0 = i_0 + (q_0 * \mathbf{p_0}) \vdash m_0 = i_0 + (q_0 * \mathbf{p_0})$

(C419) $\mathbf{0} < \mathbf{p_0}, i_0 = \mathbf{0} \vdash i_0 = \mathbf{0}$

(C420) $\mathbf{0} < \mathbf{p_0}, i_0 < \mathbf{p_0} \vdash i_0 < \mathbf{p_0}$

(C428) $t_0 = i_0 + (q_0 * \mathbf{p_0}) \vdash t_0 = i_0 + (q_0 * \mathbf{p_0})$

(C431) $\mathbf{1} < \mathbf{p_0} \vdash \mathbf{1} < \mathbf{p_0}$

(C432) $\mathbf{0} < \mathbf{p_1}, t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_1}) \vdash t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_1})$

(C435) $\mathbf{0} < \mathbf{p_1}, m_0 = i_0 + (q_0 * \mathbf{p_1}) \vdash m_0 = i_0 + (q_0 * \mathbf{p_1})$

(C436) $\mathbf{0} < \mathbf{p_1}, i_0 = \mathbf{0} \vdash i_0 = \mathbf{0}$

(C437) $\mathbf{0} < \mathbf{p_1}, i_0 < \mathbf{p_1} \vdash i_0 < \mathbf{p_1}$

(C445) $t_0 = i_0 + (q_0 * \mathbf{p_1}) \vdash t_0 = i_0 + (q_0 * \mathbf{p_1})$

(C448) $\mathbf{1} < \mathbf{p_1} \vdash \mathbf{1} < \mathbf{p_1}$

(C449) $\mathbf{0} < \mathbf{p_2}, t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_2}) \vdash t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_2})$

(C452) $\mathbf{0} < \mathbf{p_2}, m_0 = i_0 + (q_0 * \mathbf{p_2}) \vdash m_0 = i_0 + (q_0 * \mathbf{p_2})$

(C453) $\mathbf{0} < \mathbf{p_2}, i_0 = \mathbf{0} \vdash i_0 = \mathbf{0}$

(C454) $\mathbf{0} < \mathbf{p_2}, i_0 < \mathbf{p_2} \vdash i_0 < \mathbf{p_2}$

(C462) $t_0 = i_0 + (q_0 * \mathbf{p_2}) \vdash t_0 = i_0 + (q_0 * \mathbf{p_2})$

(C465) $\mathbf{1} < \mathbf{p_2} \vdash \mathbf{1} < \mathbf{p_2}$

(C466) $\mathbf{0} < \mathbf{p_3}, t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_3}) \vdash t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_3})$

(C469) $\mathbf{0} < \mathbf{p_3}, m_0 = i_0 + (q_0 * \mathbf{p_3}) \vdash m_0 = i_0 + (q_0 * \mathbf{p_3})$

(C470) $\mathbf{0} < \mathbf{p_3}, i_0 = \mathbf{0} \vdash i_0 = \mathbf{0}$

(C471) $\mathbf{0} < \mathbf{p_3}, i_0 < \mathbf{p_3} \vdash i_0 < \mathbf{p_3}$

(C479) $t_0 = i_0 + (q_0 * \mathbf{p_3}) \vdash t_0 = i_0 + (q_0 * \mathbf{p_3})$

(C482) $\mathbf{1} < \mathbf{p_3} \vdash \mathbf{1} < \mathbf{p_3}$

(C483) $\mathbf{0} < \mathbf{p_4}, t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_4}) \vdash t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_4})$

(C486) $\mathbf{0} < \mathbf{p_4}, m_0 = i_0 + (q_0 * \mathbf{p_4}) \vdash m_0 = i_0 + (q_0 * \mathbf{p_4})$

(C487) $\mathbf{0} < \mathbf{p_4}, i_0 = \mathbf{0} \vdash i_0 = \mathbf{0}$

(C488) $\mathbf{0} < \mathbf{p_4}, i_0 < \mathbf{p_4} \vdash i_0 < \mathbf{p_4}$

(C496) $t_0 = i_0 + (q_0 * \mathbf{p_4}) \vdash t_0 = i_0 + (q_0 * \mathbf{p_4})$

(C499) $\mathbf{1} < \mathbf{p_4} \vdash \mathbf{1} < \mathbf{p_4}$

(C500) $\mathbf{0} < \mathbf{p_5}, t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_5}) \vdash t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_5})$

(C503) $\mathbf{0} < \mathbf{p_5}, m_0 = i_0 + (q_0 * \mathbf{p_5}) \vdash m_0 = i_0 + (q_0 * \mathbf{p_5})$

(C504) $\mathbf{0} < \mathbf{p_5}, i_0 = \mathbf{0} \vdash i_0 = \mathbf{0}$

(C505) $\mathbf{0} < \mathbf{p_5}, i_0 < \mathbf{p_5} \vdash i_0 < \mathbf{p_5}$

(C513) $t_0 = i_0 + (q_0 * \mathbf{p_5}) \vdash t_0 = i_0 + (q_0 * \mathbf{p_5})$

(C516) $\mathbf{1} < \mathbf{p_5} \vdash \mathbf{1} < \mathbf{p_5}$

(C517) $\mathbf{0} < \mathbf{p_6}, t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_6}) \vdash t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_6})$

(C520) $\mathbf{0} < \mathbf{p_6}, m_0 = i_0 + (q_0 * \mathbf{p_6}) \vdash m_0 = i_0 + (q_0 * \mathbf{p_6})$

(C521) $\mathbf{0} < \mathbf{p_6}, i_0 = \mathbf{0} \vdash i_0 = \mathbf{0}$

(C522) $\mathbf{0} < \mathbf{p_6}, i_0 < \mathbf{p_6} \vdash i_0 < \mathbf{p_6}$

(C530) $t_0 = i_0 + (q_0 * \mathbf{p_6}) \vdash t_0 = i_0 + (q_0 * \mathbf{p_6})$

(C533) $\mathbf{1} < \mathbf{p_6} \vdash \mathbf{1} < \mathbf{p_6}$

(C534) $\mathbf{0} < \mathbf{p_7}, t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_7}) \vdash t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_7})$

(C537) $\mathbf{0} < \mathbf{p_7}, m_0 = i_0 + (q_0 * \mathbf{p_7}) \vdash m_0 = i_0 + (q_0 * \mathbf{p_7})$

(C538) $\mathbf{0} < \mathbf{p_7}, i_0 = \mathbf{0} \vdash i_0 = \mathbf{0}$

(C539) $\mathbf{0} < \mathbf{p_7}, i_0 < \mathbf{p_7} \vdash i_0 < \mathbf{p_7}$

(C547) $t_0 = i_0 + (q_0 * \mathbf{p_7}) \vdash t_0 = i_0 + (q_0 * \mathbf{p_7})$

(C550) $\mathbf{1} < \mathbf{p_7} \vdash \mathbf{1} < \mathbf{p_7}$

(C551) $\mathbf{0} < \mathbf{p_8}, t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_8}) \vdash t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_8})$

(C554) $\mathbf{0} < \mathbf{p_8}, m_0 = i_0 + (q_0 * \mathbf{p_8}) \vdash m_0 = i_0 + (q_0 * \mathbf{p_8})$

(C555) $\mathbf{0} < \mathbf{p_8}, i_0 = \mathbf{0} \vdash i_0 = \mathbf{0}$

(C556) $\mathbf{0} < \mathbf{p_8}, i_0 < \mathbf{p_8} \vdash i_0 < \mathbf{p_8}$

(C564) $t_0 = i_0 + (q_0 * \mathbf{p_8}) \vdash t_0 = i_0 + (q_0 * \mathbf{p_8})$

(C567) $\mathbf{1} < \mathbf{p_8} \vdash \mathbf{1} < \mathbf{p_8}$

(C568) $\mathbf{0} < \mathbf{p_9}, t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_9}) \vdash t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_9})$

(C571) $\mathbf{0} < \mathbf{p_9}, m_0 = i_0 + (q_0 * \mathbf{p_9}) \vdash m_0 = i_0 + (q_0 * \mathbf{p_9})$

(C572) $\mathbf{0} < \mathbf{p_9}, i_0 = \mathbf{0} \vdash i_0 = \mathbf{0}$

(C573) $0 < \mathbf{p_9}, i_0 < \mathbf{p_9} \vdash i_0 < \mathbf{p_9}$

(C581) $t_0 = i_0 + (q_0 * \mathbf{p_9}) \vdash t_0 = i_0 + (q_0 * \mathbf{p_9})$

(C584) $1 < \mathbf{p_9} \vdash 1 < \mathbf{p_9}$

(C585) $0 < \mathbf{p_{10}}, t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_{10}}) \vdash t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_{10}})$

(C588) $0 < \mathbf{p_{10}}, m_0 = i_0 + (q_0 * \mathbf{p_{10}}) \vdash m_0 = i_0 + (q_0 * \mathbf{p_{10}})$

(C589) $0 < \mathbf{p_{10}}, i_0 = \mathbf{0} \vdash i_0 = \mathbf{0}$

(C590) $0 < \mathbf{p_{10}}, i_0 < \mathbf{p_{10}} \vdash i_0 < \mathbf{p_{10}}$

(C598) $t_0 = i_0 + (q_0 * \mathbf{p_{10}}) \vdash t_0 = i_0 + (q_0 * \mathbf{p_{10}})$

(C601) $1 < \mathbf{p_{10}} \vdash 1 < \mathbf{p_{10}}$

(C602) $0 < \mathbf{p_{11}}, t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_{11}}) \vdash t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_{11}})$

(C605) $0 < \mathbf{p_{11}}, m_0 = i_0 + (q_0 * \mathbf{p_{11}}) \vdash m_0 = i_0 + (q_0 * \mathbf{p_{11}})$

(C606) $0 < \mathbf{p_{11}}, i_0 = \mathbf{0} \vdash i_0 = \mathbf{0}$

(C607) $0 < \mathbf{p_{11}}, i_0 < \mathbf{p_{11}} \vdash i_0 < \mathbf{p_{11}}$

(C615) $t_0 = i_0 + (q_0 * \mathbf{p_{11}}) \vdash t_0 = i_0 + (q_0 * \mathbf{p_{11}})$

(C618) $1 < \mathbf{p_{11}} \vdash 1 < \mathbf{p_{11}}$

(C619) $0 < \mathbf{p_{12}}, t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_{12}}) \vdash t_0 = i_0 + ((q_0 + r_0) * \mathbf{p_{12}})$

(C622) $0 < \mathbf{p_{12}}, m_0 = i_0 + (q_0 * \mathbf{p_{12}}) \vdash m_0 = i_0 + (q_0 * \mathbf{p_{12}})$

(C623) $0 < \mathbf{p_{12}}, i_0 = \mathbf{0} \vdash i_0 = \mathbf{0}$

(C624) $0 < \mathbf{p_{12}}, i_0 < \mathbf{p_{12}} \vdash i_0 < \mathbf{p_{12}}$

(C632) $t_0 = i_0 + (q_0 * \mathbf{p_{12}}) \vdash t_0 = i_0 + (q_0 * \mathbf{p_{12}})$

(C635) $1 < \mathbf{p_{12}} \vdash 1 < \mathbf{p_{12}}$

(C636) $nat_{103} = \mathbf{p_{12}} \vdash nat_{103} = \mathbf{p_{12}}$

(C637) $nat_{103} = \mathbf{1} \vdash nat_{103} = \mathbf{1}$

(C638) $nat_{103} * nat_{104} = \mathbf{p_{12}} \vdash nat_{103} * nat_{104} = \mathbf{p_{12}}$

(C639) $1 < \mathbf{p_{12}} \vdash 1 < \mathbf{p_{12}}$

(C641) $nat_{101} = \mathbf{p_{11}} \vdash nat_{101} = \mathbf{p_{11}}$

(C642) $nat_{101} = \mathbf{1} \vdash nat_{101} = \mathbf{1}$

(C643) $nat_{101} * nat_{102} = \mathbf{p_{11}} \vdash nat_{101} * nat_{102} = \mathbf{p_{11}}$

(C644) $1 < \mathbf{p_{11}} \vdash 1 < \mathbf{p_{11}}$

(C646) $nat_{99} = \mathbf{p_{10}} \vdash nat_{99} = \mathbf{p_{10}}$

(C647) $nat_{99} = \mathbf{1} \vdash nat_{99} = \mathbf{1}$

(C648) $nat_{99} * nat_{100} = \mathbf{p_{10}} \vdash nat_{99} * nat_{100} = \mathbf{p_{10}}$

(C649) $\mathbf{1} < \mathbf{p_{10}} \vdash \mathbf{1} < \mathbf{p_{10}}$

(C651) $nat_{97} = \mathbf{p_9} \vdash nat_{97} = \mathbf{p_9}$

(C652) $nat_{97} = \mathbf{1} \vdash nat_{97} = \mathbf{1}$

(C653) $nat_{97} * nat_{98} = \mathbf{p_9} \vdash nat_{97} * nat_{98} = \mathbf{p_9}$

(C654) $\mathbf{1} < \mathbf{p_9} \vdash \mathbf{1} < \mathbf{p_9}$

(C656) $nat_{95} = \mathbf{p_8} \vdash nat_{95} = \mathbf{p_8}$

(C657) $nat_{95} = \mathbf{1} \vdash nat_{95} = \mathbf{1}$

(C658) $nat_{95} * nat_{96} = \mathbf{p_8} \vdash nat_{95} * nat_{96} = \mathbf{p_8}$

(C659) $\mathbf{1} < \mathbf{p_8} \vdash \mathbf{1} < \mathbf{p_8}$

(C661) $nat_{93} = \mathbf{p_7} \vdash nat_{93} = \mathbf{p_7}$

(C662) $nat_{93} = \mathbf{1} \vdash nat_{93} = \mathbf{1}$

(C663) $nat_{93} * nat_{94} = \mathbf{p_7} \vdash nat_{93} * nat_{94} = \mathbf{p_7}$

(C664) $\mathbf{1} < \mathbf{p_7} \vdash \mathbf{1} < \mathbf{p_7}$

(C666) $nat_{91} = \mathbf{p_6} \vdash nat_{91} = \mathbf{p_6}$

(C667) $nat_{91} = \mathbf{1} \vdash nat_{91} = \mathbf{1}$

(C668) $nat_{91} * nat_{92} = \mathbf{p_6} \vdash nat_{91} * nat_{92} = \mathbf{p_6}$

(C669) $\mathbf{1} < \mathbf{p_6} \vdash \mathbf{1} < \mathbf{p_6}$

(C671) $nat_{89} = \mathbf{p_5} \vdash nat_{89} = \mathbf{p_5}$

(C672) $nat_{89} = \mathbf{1} \vdash nat_{89} = \mathbf{1}$

(C673) $nat_{89} * nat_{90} = \mathbf{p_5} \vdash nat_{89} * nat_{90} = \mathbf{p_5}$

(C674) $\mathbf{1} < \mathbf{p_5} \vdash \mathbf{1} < \mathbf{p_5}$

(C676) $nat_{87} = \mathbf{p_4} \vdash nat_{87} = \mathbf{p_4}$

(C677) $nat_{87} = \mathbf{1} \vdash nat_{87} = \mathbf{1}$

(C678) $nat_{87} * nat_{88} = \mathbf{p_4} \vdash nat_{87} * nat_{88} = \mathbf{p_4}$

(C679) $\mathbf{1} < \mathbf{p_4} \vdash \mathbf{1} < \mathbf{p_4}$

(C681) $nat_{85} = \mathbf{p_3} \vdash nat_{85} = \mathbf{p_3}$

(C682) $nat_{85} = \mathbf{1} \vdash nat_{85} = \mathbf{1}$

(C683) $nat_{85} * nat_{86} = \mathbf{p_3} \vdash nat_{85} * nat_{86} = \mathbf{p_3}$

(C684) $\mathbf{1} < \mathbf{p_3} \vdash \mathbf{1} < \mathbf{p_3}$

(C686) $nat_{83} = \mathbf{p_2} \vdash nat_{83} = \mathbf{p_2}$

(C687) $nat_{83} = \mathbf{1} \vdash nat_{83} = \mathbf{1}$

(C688) $nat_{83} * nat_{84} = \mathbf{p_2} \vdash nat_{83} * nat_{84} = \mathbf{p_2}$

(C689) $\mathbf{1} < \mathbf{p_2} \vdash \mathbf{1} < \mathbf{p_2}$

(C691) $nat_{81} = \mathbf{p_1} \vdash nat_{81} = \mathbf{p_1}$

(C692) $nat_{81} = \mathbf{1} \vdash nat_{81} = \mathbf{1}$

(C693) $nat_{81} * nat_{82} = \mathbf{p_1} \vdash nat_{81} * nat_{82} = \mathbf{p_1}$

(C694) $\mathbf{1} < \mathbf{p_1} \vdash \mathbf{1} < \mathbf{p_1}$

(C696) $nat_{79} = \mathbf{p_0} \vdash nat_{79} = \mathbf{p_0}$

(C697) $nat_{79} = \mathbf{1} \vdash nat_{79} = \mathbf{1}$

(C698) $nat_{79} * nat_{80} = \mathbf{p_0} \vdash nat_{79} * nat_{80} = \mathbf{p_0}$

(C699) $\mathbf{1} < \mathbf{p_0} \vdash \mathbf{1} < \mathbf{p_0}$

(C701) $nat_{77} = t_0 \vdash nat_{77} = t_0$

(C702) $nat_{77} = \mathbf{1} \vdash nat_{77} = \mathbf{1}$

(C703) $nat_{77} * nat_{78} = t_0 \vdash nat_{77} * nat_{78} = t_0$

(C704) $\mathbf{1} < t_0 \vdash \mathbf{1} < t_0$

(C705) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C706) $nat_{75} = t_0 \vdash nat_{75} = t_0$

(C707) $nat_{75} = \mathbf{1} \vdash nat_{75} = \mathbf{1}$

(C708) $nat_{75} * nat_{76} = t_0 \vdash nat_{75} * nat_{76} = t_0$

(C709) $\mathbf{1} < t_0 \vdash \mathbf{1} < t_0$

(C710) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C711) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C712) $nat_{73} = t_0 \vdash nat_{73} = t_0$

(C713) $nat_{73} = \mathbf{1} \vdash nat_{73} = \mathbf{1}$

(C714) $nat_{73} * nat_{74} = t_0 \vdash nat_{73} * nat_{74} = t_0$

(C715) $\mathbf{1} < t_0 \vdash \mathbf{1} < t_0$

(C716) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C717) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C718) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C719) $nat_{71} = t_0 \vdash nat_{71} = t_0$

(C720) $nat_{71} = \mathbf{1} \vdash nat_{71} = \mathbf{1}$

(C721) $nat_{71} * nat_{72} = t_0 \vdash nat_{71} * nat_{72} = t_0$

(C722) $\mathbf{1} < t_0 \vdash \mathbf{1} < t_0$

(C723) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C724) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C725) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C726) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C727) $nat_{69} = t_0 \vdash nat_{69} = t_0$

(C728) $nat_{69} = \mathbf{1} \vdash nat_{69} = \mathbf{1}$

(C729) $nat_{69} * nat_{70} = t_0 \vdash nat_{69} * nat_{70} = t_0$

(C730) $\mathbf{1} < t_0 \vdash \mathbf{1} < t_0$

(C731) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C732) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C733) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C734) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C735) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C736) $nat_{67} = t_0 \vdash nat_{67} = t_0$

(C737) $nat_{67} = \mathbf{1} \vdash nat_{67} = \mathbf{1}$

(C738) $nat_{67} * nat_{68} = t_0 \vdash nat_{67} * nat_{68} = t_0$

(C739) $\mathbf{1} < t_0 \vdash \mathbf{1} < t_0$

(C740) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C741) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C742) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C743) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C744) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C745) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C746) $nat_{65} = t_0 \vdash nat_{65} = t_0$

(C747) $nat_{65} = \mathbf{1} \vdash nat_{65} = \mathbf{1}$

(C748) $nat_{65} * nat_{66} = t_0 \vdash nat_{65} * nat_{66} = t_0$

(C749) $\mathbf{1} < t_0 \vdash \mathbf{1} < t_0$

(C750) $t_0 = \mathbf{p_6} \vdash t_0 = \mathbf{p_6}$

(C751) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C752) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C753) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C754) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C755) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C756) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C757) $nat_{63} = t_0 \vdash nat_{63} = t_0$

(C758) $nat_{63} = \mathbf{1} \vdash nat_{63} = \mathbf{1}$

(C759) $nat_{63} * nat_{64} = t_0 \vdash nat_{63} * nat_{64} = t_0$

(C760) $\mathbf{1} < t_0 \vdash \mathbf{1} < t_0$

(C761) $t_0 = \mathbf{p_7} \vdash t_0 = \mathbf{p_7}$

(C762) $t_0 = \mathbf{p_6} \vdash t_0 = \mathbf{p_6}$

(C763) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C764) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C765) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C766) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C767) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C768) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C769) $nat_{61} = t_0 \vdash nat_{61} = t_0$

(C770) $nat_{61} = \mathbf{1} \vdash nat_{61} = \mathbf{1}$

(C771) $nat_{61} * nat_{62} = t_0 \vdash nat_{61} * nat_{62} = t_0$

(C772) $\mathbf{1} < t_0 \vdash \mathbf{1} < t_0$

(C773) $t_0 = \mathbf{p_8} \vdash t_0 = \mathbf{p_8}$

(C774) $t_0 = \mathbf{p_7} \vdash t_0 = \mathbf{p_7}$

(C775) $t_0 = \mathbf{p_6} \vdash t_0 = \mathbf{p_6}$

(C776) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C777) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C778) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C779) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C780) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C781) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C782) $nat_{59} = t_0 \vdash nat_{59} = t_0$

(C783) $nat_{59} = \mathbf{1} \vdash nat_{59} = \mathbf{1}$

(C784) $nat_{59} * nat_{60} = t_0 \vdash nat_{59} * nat_{60} = t_0$

(C785) $\mathbf{1} < t_0 \vdash \mathbf{1} < t_0$

(C786) $t_0 = \mathbf{p_9} \vdash t_0 = \mathbf{p_9}$

(C787) $t_0 = \mathbf{p_8} \vdash t_0 = \mathbf{p_8}$

(C788) $t_0 = \mathbf{p_7} \vdash t_0 = \mathbf{p_7}$

(C789) $t_0 = \mathbf{p_6} \vdash t_0 = \mathbf{p_6}$

(C790) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C791) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C792) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C793) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C794) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C795) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C796) $nat_{57} = t_0 \vdash nat_{57} = t_0$

(C797) $nat_{57} = \mathbf{1} \vdash nat_{57} = \mathbf{1}$

(C798) $nat_{57} * nat_{58} = t_0 \vdash nat_{57} * nat_{58} = t_0$

(C799) $\mathbf{1} < t_0 \vdash \mathbf{1} < t_0$

(C800) $t_0 = \mathbf{p_{10}} \vdash t_0 = \mathbf{p_{10}}$

(C801) $t_0 = \mathbf{p_9} \vdash t_0 = \mathbf{p_9}$

(C802) $t_0 = \mathbf{p_8} \vdash t_0 = \mathbf{p_8}$

(C803) $t_0 = \mathbf{p_7} \vdash t_0 = \mathbf{p_7}$

(C804) $t_0 = \mathbf{p_6} \vdash t_0 = \mathbf{p_6}$

(C805) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C806) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C807) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C808) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C809) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C810) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C811) $nat_{55} = t_0 \vdash nat_{55} = t_0$

(C812) $nat_{55} = \mathbf{1} \vdash nat_{55} = \mathbf{1}$

(C813) $nat_{55} * nat_{56} = t_0 \vdash nat_{55} * nat_{56} = t_0$

(C814) $\mathbf{1} < t_0 \vdash \mathbf{1} < t_0$

(C815) $t_0 = \mathbf{p_{11}} \vdash t_0 = \mathbf{p_{11}}$

(C816) $t_0 = \mathbf{p_{10}} \vdash t_0 = \mathbf{p_{10}}$

(C817) $t_0 = \mathbf{p_9} \vdash t_0 = \mathbf{p_9}$

(C818) $t_0 = \mathbf{p_8} \vdash t_0 = \mathbf{p_8}$

(C819) $t_0 = \mathbf{p_7} \vdash t_0 = \mathbf{p_7}$

(C820) $t_0 = \mathbf{p_6} \vdash t_0 = \mathbf{p_6}$

(C821) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C822) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C823) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C824) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C825) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C826) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C853) $m_0 = \mathbf{0} + (nat_{25} * t_0) \vdash m_0 = \mathbf{0} + (nat_{25} * t_0)$

(C854) $t_0 = \mathbf{p_{12}} \vdash t_0 = \mathbf{p_{12}}$

(C855) $m_0 = \mathbf{0} + (nat_{24} * t_0) \vdash m_0 = \mathbf{0} + (nat_{24} * t_0)$

(C856) $t_0 = \mathbf{p_{11}} \vdash t_0 = \mathbf{p_{11}}$

(C857) $m_0 = \mathbf{0} + (nat_{23} * t_0) \vdash m_0 = \mathbf{0} + (nat_{23} * t_0)$

(C858) $t_0 = \mathbf{p_{10}} \vdash t_0 = \mathbf{p_{10}}$

(C859) $m_0 = \mathbf{0} + (nat_{22} * t_0) \vdash m_0 = \mathbf{0} + (nat_{22} * t_0)$

(C860) $t_0 = \mathbf{p_9} \vdash t_0 = \mathbf{p_9}$

(C861) $m_0 = \mathbf{0} + (nat_{21} * t_0) \vdash m_0 = \mathbf{0} + (nat_{21} * t_0)$

(C862) $t_0 = \mathbf{p_8} \vdash t_0 = \mathbf{p_8}$

(C863) $m_0 = \mathbf{0} + (nat_{20} * t_0) \vdash m_0 = \mathbf{0} + (nat_{20} * t_0)$

(C864) $t_0 = \mathbf{p_7} \vdash t_0 = \mathbf{p_7}$

(C865) $m_0 = \mathbf{0} + (nat_{19} * t_0) \vdash m_0 = \mathbf{0} + (nat_{19} * t_0)$

(C866) $t_0 = \mathbf{p_6} \vdash t_0 = \mathbf{p_6}$

(C867) $m_0 = \mathbf{0} + (nat_{18} * t_0) \vdash m_0 = \mathbf{0} + (nat_{18} * t_0)$

(C868) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C869) $m_0 = \mathbf{0} + (nat_{17} * t_0) \vdash m_0 = \mathbf{0} + (nat_{17} * t_0)$

(C870) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C871) $m_0 = \mathbf{0} + (nat_{16} * t_0) \vdash m_0 = \mathbf{0} + (nat_{16} * t_0)$

(C872) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C873) $m_0 = \mathbf{0} + (nat_{15} * t_0) \vdash m_0 = \mathbf{0} + (nat_{15} * t_0)$

(C874) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C875) $m_0 = \mathbf{0} + (nat_{14} * t_0) \vdash m_0 = \mathbf{0} + (nat_{14} * t_0)$

(C876) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C877) $m_0 = \mathbf{0} + (nat_{13} * t_0) \vdash m_0 = \mathbf{0} + (nat_{13} * t_0)$

(C878) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C884) $m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C885) $m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C887) $t_0 = \mathbf{p_{12}}, m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C890) $t_0 = \mathbf{p_{11}}, m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C893) $t_0 = \mathbf{p_{10}}, m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C896) $t_0 = \mathbf{p_9}, m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C899) $t_0 = \mathbf{p_8}, m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C902) $t_0 = \mathbf{p_7}, m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C905) $t_0 = \mathbf{p_6}, m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C908) $t_0 = \mathbf{p_5}, m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C911) $t_0 = \mathbf{p_4}, m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C914) $t_0 = \mathbf{p_3}, m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C917) $t_0 = \mathbf{p_2}, m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C920) $t_0 = \mathbf{p_1}, m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C923) $t_0 = \mathbf{p_0}, m_0 = \mathbf{1} \vdash m_0 = \mathbf{1}$

(C925) $m_0 = \mathbf{0} + (nat_{28} * \mathbf{p_{12}}) \vdash m_0 = \mathbf{0} + (nat_{28} * \mathbf{p_{12}})$

(C927) $m_0 = \mathbf{0} + (nat_{52} * t_0) \vdash m_0 = \mathbf{0} + (nat_{52} * t_0)$

(C928) $t_0 = \mathbf{p_{11}} \vdash t_0 = \mathbf{p_{11}}$

(C929) $t_0 = \mathbf{p_{10}} \vdash t_0 = \mathbf{p_{10}}$

(C930) $t_0 = \mathbf{p_9} \vdash t_0 = \mathbf{p_9}$

(C931) $t_0 = \mathbf{p_8} \vdash t_0 = \mathbf{p_8}$

(C932) $t_0 = \mathbf{p_7} \vdash t_0 = \mathbf{p_7}$

(C933) $t_0 = \mathbf{p_6} \vdash t_0 = \mathbf{p_6}$

(C934) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C935) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C936) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C937) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C938) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C939) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C940) $m_0 = \mathbf{0} + (nat_{29} * \mathbf{p_{11}}) \vdash m_0 = \mathbf{0} + (nat_{29} * \mathbf{p_{11}})$

(C942) $m_0 = \mathbf{0} + (nat_{51} * t_0) \vdash m_0 = \mathbf{0} + (nat_{51} * t_0)$

(C943) $t_0 = \mathbf{p_{10}} \vdash t_0 = \mathbf{p_{10}}$

(C944) $t_0 = \mathbf{p_9} \vdash t_0 = \mathbf{p_9}$

(C945) $t_0 = \mathbf{p_8} \vdash t_0 = \mathbf{p_8}$

(C946) $t_0 = \mathbf{p_7} \vdash t_0 = \mathbf{p_7}$

(C947) $t_0 = \mathbf{p_6} \vdash t_0 = \mathbf{p_6}$

(C948) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C949) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C950) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C951) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C952) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C953) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C954) $m_0 = \mathbf{0} + (nat_{30} * \mathbf{p_{10}}) \vdash m_0 = \mathbf{0} + (nat_{30} * \mathbf{p_{10}})$

(C956) $m_0 = \mathbf{0} + (nat_{50} * t_0) \vdash m_0 = \mathbf{0} + (nat_{50} * t_0)$

(C957) $t_0 = \mathbf{p_9} \vdash t_0 = \mathbf{p_9}$

(C958) $t_0 = \mathbf{p_8} \vdash t_0 = \mathbf{p_8}$

(C959) $t_0 = \mathbf{p_7} \vdash t_0 = \mathbf{p_7}$

(C960) $t_0 = \mathbf{p_6} \vdash t_0 = \mathbf{p_6}$

(C961) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C962) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C963) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C964) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C965) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C966) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C967) $m_0 = \mathbf{0} + (nat_{31} * \mathbf{p_9}) \vdash m_0 = \mathbf{0} + (nat_{31} * \mathbf{p_9})$

(C969) $m_0 = \mathbf{0} + (nat_{49} * t_0) \vdash m_0 = \mathbf{0} + (nat_{49} * t_0)$

(C970) $t_0 = \mathbf{p_8} \vdash t_0 = \mathbf{p_8}$

(C971) $t_0 = \mathbf{p_7} \vdash t_0 = \mathbf{p_7}$

(C972) $t_0 = \mathbf{p_6} \vdash t_0 = \mathbf{p_6}$

(C973) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C974) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C975) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C976) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C977) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C978) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C979) $m_0 = \mathbf{0} + (nat_{32} * \mathbf{p_8}) \vdash m_0 = \mathbf{0} + (nat_{32} * \mathbf{p_8})$

(C981) $m_0 = \mathbf{0} + (nat_{48} * t_0) \vdash m_0 = \mathbf{0} + (nat_{48} * t_0)$

(C982) $t_0 = \mathbf{p_7} \vdash t_0 = \mathbf{p_7}$

(C983) $t_0 = \mathbf{p_6} \vdash t_0 = \mathbf{p_6}$

(C984) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C985) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C986) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C987) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C988) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C989) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C990) $m_0 = \mathbf{0} + (nat_{33} * \mathbf{p_7}) \vdash m_0 = \mathbf{0} + (nat_{33} * \mathbf{p_7})$

(C992) $m_0 = \mathbf{0} + (nat_{47} * t_0) \vdash m_0 = \mathbf{0} + (nat_{47} * t_0)$

(C993) $t_0 = \mathbf{p_6} \vdash t_0 = \mathbf{p_6}$

(C994) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C995) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C996) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C997) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C998) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C999) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C1000) $m_0 = \mathbf{0} + (nat_{34} * \mathbf{p_6}) \vdash m_0 = \mathbf{0} + (nat_{34} * \mathbf{p_6})$

(C1002) $m_0 = \mathbf{0} + (nat_{46} * t_0) \vdash m_0 = \mathbf{0} + (nat_{46} * t_0)$

(C1003) $t_0 = \mathbf{p_5} \vdash t_0 = \mathbf{p_5}$

(C1004) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C1005) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C1006) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C1007) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C1008) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C1009) $m_0 = \mathbf{0} + (nat_{35} * \mathbf{p_5}) \vdash m_0 = \mathbf{0} + (nat_{35} * \mathbf{p_5})$

(C1011) $m_0 = \mathbf{0} + (nat_{45} * t_0) \vdash m_0 = \mathbf{0} + (nat_{45} * t_0)$

(C1012) $t_0 = \mathbf{p_4} \vdash t_0 = \mathbf{p_4}$

(C1013) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C1014) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C1015) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C1016) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C1017) $m_0 = \mathbf{0} + (nat_{36} * \mathbf{p_4}) \vdash m_0 = \mathbf{0} + (nat_{36} * \mathbf{p_4})$

(C1019) $m_0 = \mathbf{0} + (nat_{44} * t_0) \vdash m_0 = \mathbf{0} + (nat_{44} * t_0)$

(C1020) $t_0 = \mathbf{p_3} \vdash t_0 = \mathbf{p_3}$

(C1021) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C1022) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C1023) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C1024) $m_0 = \mathbf{0} + (nat_{37} * \mathbf{p_3}) \vdash m_0 = \mathbf{0} + (nat_{37} * \mathbf{p_3})$

(C1026) $m_0 = \mathbf{0} + (nat_{43} * t_0) \vdash m_0 = \mathbf{0} + (nat_{43} * t_0)$

(C1027) $t_0 = \mathbf{p_2} \vdash t_0 = \mathbf{p_2}$

(C1028) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C1029) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C1030) $m_0 = \mathbf{0} + (nat_{38} * \mathbf{p_2}) \vdash m_0 = \mathbf{0} + (nat_{38} * \mathbf{p_2})$

(C1032) $m_0 = \mathbf{0} + (nat_{42} * t_0) \vdash m_0 = \mathbf{0} + (nat_{42} * t_0)$

(C1033) $t_0 = \mathbf{p_1} \vdash t_0 = \mathbf{p_1}$

(C1034) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C1035) $m_0 = \mathbf{0} + (nat_{39} * \mathbf{p_1}) \vdash m_0 = \mathbf{0} + (nat_{39} * \mathbf{p_1})$

(C1037) $m_0 = \mathbf{0} + (nat_{41} * t_0) \vdash m_0 = \mathbf{0} + (nat_{41} * t_0)$

(C1038) $t_0 = \mathbf{p_0} \vdash t_0 = \mathbf{p_0}$

(C1039) $m_0 = \mathbf{0} + (nat_{40} * \mathbf{p_0}) \vdash m_0 = \mathbf{0} + (nat_{40} * \mathbf{p_0})$

4   Clauses with Reflexivity

(C640) $\vdash \mathbf{p_{12}} = \mathbf{p_{12}}$

(C645) $\vdash \mathbf{p_{11}} = \mathbf{p_{11}}$

(C650) $\vdash \mathbf{p_{10}} = \mathbf{p_{10}}$

(C655) $\vdash \mathbf{p_9} = \mathbf{p_9}$

(C660) $\vdash \mathbf{p_8} = \mathbf{p_8}$

(C665) $\vdash \mathbf{p_7} = \mathbf{p_7}$

(C670) $\vdash \mathbf{p_6} = \mathbf{p_6}$

(C675) $\vdash \mathbf{p_5} = \mathbf{p_5}$

(C680) $\vdash \mathbf{p_4} = \mathbf{p_4}$

(C685) $\vdash \mathbf{p_3} = \mathbf{p_3}$

(C690) $\vdash \mathbf{p_2} = \mathbf{p_2}$

(C695) $\vdash \mathbf{p_1} = \mathbf{p_1}$

(C700) $\vdash \mathbf{p_0} = \mathbf{p_0}$

(C879) $\vdash m_0 = \mathbf{1}, m_0 = m_0$

(C926) $\vdash \mathbf{p_{12}} = \mathbf{p_{12}}$

(C941) $\vdash \mathbf{p_{11}} = \mathbf{p_{11}}$

(C955) $\vdash \mathbf{p_{10}} = \mathbf{p_{10}}$

(C968) $\vdash \mathbf{p_9} = \mathbf{p_9}$

(C980) $\vdash \mathbf{p_8} = \mathbf{p_8}$

(C991) $\vdash \mathbf{p_7} = \mathbf{p_7}$

(C1001) $\vdash \mathbf{p_6} = \mathbf{p_6}$

(C1010) $\vdash \mathbf{p_5} = \mathbf{p_5}$

(C1018) $\vdash \mathbf{p_4} = \mathbf{p_4}$

(C1025) $\vdash \mathbf{p_3} = \mathbf{p_3}$

(C1031) $\vdash \mathbf{p_2} = \mathbf{p_2}$

(C1036) $\vdash \mathbf{p_1} = \mathbf{p_1}$

(C1040) $\vdash \mathbf{p_0} = \mathbf{p_0}$

(C1041) $\vdash \mathbf{1} = \mathbf{1}$

5 Explicit Axioms

(A1) $k + l = k + m \vdash l = m$

(A2) $\vdash k + l = l + k$

(A3) $\vdash k + (l + m) = (k + l) + m$

(A4) $\vdash (k + l) + m = k + (l + m)$ (subsumes 13 clauses)

(A5) $\vdash k + \mathbf{0} = k$

(A6) $\vdash \mathbf{0} + k = k$ (subsumes 27 clauses)

(A7) $k + l = m + l \vdash k = m$

(A8) $k = l + k \vdash l = \mathbf{0}$

(A9) $k = k + l \vdash l = \mathbf{0}$

(A10) $k + l = k \vdash l = \mathbf{0}$

(A11) $k + l = l \vdash k = \mathbf{0}$

(A12) $k = l \vdash m + k = m + l$

(A13) $\mathbf{1} + (k + \mathbf{1}) = \mathbf{1} \vdash$ (subsumes 1 clause)

(A14) $\vdash k * l = l * k$ (subsumes 1 clause)

(A15) $k + \mathbf{1} = \mathbf{0} \vdash$

(A16) $\vdash k * (l * m) = (k * l) * m$

(A17) $\vdash (k * l) * m = k * (l * m)$

(A18) $\vdash k * \mathbf{1} = k$

(A19) $\vdash \mathbf{1} * k = k$

(A20) $\vdash k * (l + m) = (k * l) + (k * m)$

(A21) $\vdash (k + l) * m = (k * m) + (l * m)$

(A22) $\vdash (k * l) + (k * m) = k * (m + l)$

(A23) $\vdash (k * l) + (m * l) = (k + m) * l$ (subsumes 13 clauses)

(A24) $\vdash (k * l) + k = k * (l + \mathbf{1})$

(A25) $\vdash (k + l) * m = (l * m) + (k * m)$

(A26) $\mathbf{1} = k * l \vdash k = \mathbf{1}$

(A27) $\mathbf{1} = l * k \vdash k = \mathbf{1}$

(A28) $k < l, k < m, l < m, k + (i * m) = l + (j * m) \vdash$ (subsumes 13 clauses)

(A29) $k < l, k < m, l < m, l + (i * m) = k + (j * m) \vdash$ (subsumes 13 clauses)

(A30) $\vdash k = l, k < l, l < k$ (subsumes 13 clauses)

(A31) $\vdash \mathbf{0} < k + \mathbf{1}$

(A32) $\mathbf{1} < k, \mathbf{1} = l * k \vdash$

(A33) $\mathbf{1} < k, k = \mathbf{1} \vdash$

(A34) $n + \mathbf{1} < m \vdash n < m$ (subsumes 13 clauses)