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` FILE: bools.x
` PURPOSE: test all logical operators
` METHOD: The X assert if boolexp ? fi is used to check answers.
pass ← 0;
` test literal constant, store and fetch
b2, b1 ← false, true;
if b1 ∧ ¬b2 ⇒ fi;
pass ← pass+2;
` test multiple assign, —
b6, b5, b4, b3 ← b1 ∨ b1, true ∨ b1, b1 ∨ false, true ∨ false;
if b3 ∧ b4 ∧ b5 ∧ b6 ⇒ fi;
pass ← pass+4;
` test multiple assign,
b10, b9, b8, b7 ← b1 ∧ b1, true ∧ b1, b1 ∧ false, true ∧ false;
if ¬b7 ∧ ¬b8 ∧ b9 ∧ b10 ⇒ fi;
pass ← pass+4;
` test bool
b13, b12, b11 ← ¬(¬(¬b1)), ¬(¬b1), ¬b1;
`xx1:=b11;
`xx2:=b12;
`xx3:=b13;
`xx4:= b11;
`xx5:= b13;
`xx6:= b11 b12 b13;
if ¬b11 ∧ b12 ∧ ¬b13 ⇒ fi;
pass ← pass+3;
` test int relations
b16, b15, b14 ← 1 = 2, 1 ≤ 2, 1 < 2;
b19, b18, b17 ← 1 < 2, 1 ≥ 2, 1 ≠ 2;
if b14 ∧ b15 ∧ ¬b16 ∧ b17 ∧ ¬b18 ∧ ¬b19 ⇒ fi;
pass ← pass+6;
b16, b15, b14 ← 1 = 1, 1 ≤ 1, 1 < 1;
b19, b18, b17 ← 1 < 1, 1 ≥ 1, 1 ≠ 1;
if ¬b14 ∧ b15 ∧ b16 ∧ ¬b17 ∧ b18 ∧ ¬b19 ⇒ fi;
pass ← pass+6;
` test real relations
b15, b14 ← 1.1 ≤ 2.2, 1.1 < 2.2;
b19, b18 ← 1.1 < 2.2, 1.1 ≥ 2.2;
if b14 ∧ b15 ∧ ¬b18 ∧ ¬b19 ⇒ fi;
pass ← pass+4;
b15, b14 ← 1.1 ≤ 1.1, 1.1 < 1.1;
b19, b18 ← 1.1 < 1.1, 1.1 ≥ 1.1;
if ¬b14 ∧ b15 ∧ b18 ∧ ¬b19 ⇒ fi;
pass ← pass+4;
b21, b20 ← 2.1 ≤ 1.1, 2.1 < 1.1;
b23, b22 ← 2.1 < 1.1, 2.1 ≥ 1.1;
if ¬b20 ∧ ¬b21 ∧ b22 ∧ b23 ⇒ fi;
pass ← pass+4;
` parens
b27, b26 ← ( ¬( ¬( ¬( ¬false))))), (((((((true))))))));
if b26 ∧ ¬b27 ⇒ fi;
pass ← pass+2;
` precedence
b31, b30, b29, b28 ← ¬b1 ∨ b1 ∧ ¬b1, ¬b1 ∨ ¬b1 ∧ b1, ¬b1 ∨ b1 ∧ b1, b1 ∨ b1 ∧ b1;
if b28 ∧ b29 ∧ ¬b30 ∧ ¬b31 ⇒ fi;
pass ← pass+4;

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