Homework: Context-Free Grammars

## 1.

Signed-real-const -> sign digit-seq . digit-seq |

sign digit-seq . digit-seq exponent |

sign digit-seq . |

sign digit-seq . exponent

## 2.

bool-exp

bool-exp OR bool-exp

NOT(bool-exp OR bool-exp)

NOT((bool-exp AND bool-exp) OR bool-exp)

NOT((F AND bool-exp) OR bool-exp)

NOT((F AND T) OR bool-exp)

NOT((F AND T) OR F)

## 3.

### a.

bool-exp

NOT(bool-exp)

NOT(bool-exp OR bool-exp)

NOT(bool-exp OR bool-exp AND bool-exp)

NOT(T OR bool-exp AND bool-exp)

NOT(T OR T AND bool-exp)

NOT(T OR T AND F)

### b.

bool-exp

NOT(bool-exp)

NOT(bool-exp OR bool-exp)

NOT(T OR bool-exp)

NOT(T OR bool-exp AND bool-exp)

NOT(T OR T AND bool-exp)

NOT(T OR T AND F)

## 4.

expr

expr add-op term

expr add-op factor

expr add-op digit-seq

expr add-op digit

expr add-op 4

expr + 4

expr add-op term + 4

expr add-op factor + 4

expr add-op digit-seq + 4

expr add-op digit + 4

expr add-op 1 + 4

expr + 1 + 4

term + 1 + 4

term mult-op factor + 1 + 4

term mult-op digit-seq + 1 + 4

term mult-op digit + 1 + 4

term mult-op 3 + 1 + 4

term \* 3 + 1 + 4

factor \* 3 + 1 + 4

digit-seq \* 3 + 1 + 4

digit \* 3 + 1 + 4

5 \* 3 + 1 + 4

## 5.

expr

term add-op term add-op term

term add-op term add-op factor

term add-op term add-op digit-seq

term add-op term add-op digit

term add-op term add-op 4

term add-op term + 4

term add-op factor + 4

term add-op digit-seq + 4

term add-op digit + 4

term add-op 1 + 4

term + 1 + 4

term mult-op factor + 1 + 4

term mult-op digit-seq + 1 + 4

term mult-op digit + 1 + 4

term mult-op 3 + 1 + 4

term \* 3 + 1 + 4

factor \* 3 + 1 + 4

digit-seq \* 3 + 1 + 4

digit \* 3 + 1 + 4

5 \* 3 + 1 + 4