Transforme as gramáticas para a forma normal de Chomsky.
G1

      S → TT | U
      T → 0T | T0 | #
      U → 0U00 | #

G2

      S → aSb | bY | Ya
      Y → bY | aY | ε

G3

      E → E + T | T
      T → T × F | F
      F → (E) | a

G1
1° passo

      S0 → S
      S → TT | U
      T → 0T | T0 | #
      U → 0U00 | #

2° passo

      S0 → S
      S → TT | U
      T → 0T | T0 | #
      U → 0U00 | #

3° passo

      S0 →**TT | U**
      S → TT | U
      T → 0T | T0 | #
      U → 0U00 | #

      S0 →TT | **0U00 | #**
      S → TT | **0U00 | #**
      T → 0T | T0 | #
      U → 0U00 | #

4° passo

      S0 →TT | 0**R** | #
      S → TT | 0**R** | #
      T → 0T | T0 | #
      U → 0**R** | #
      R → U00

      S0 →TT | 0R | #
      S → TT | 0R | #
      T → 0T | T0 | #
      U → 0R | #
      R → U**X**
      X →00
      S0 →TT | **Y**R | #

S → TT | **Y**R | #
T → **Y**T | T**Y** | #
U → **Y**R | #
R → UX
X → **YY**
Y → 0
FIM
S0 →TT | YR | #
S → TT | YR | #
T → YT | TY | #
U → YR | #
R → UX
X → YY
Y → 0

G2
1° passo
S0 → S
S → aSb | bY | Ya
Y → bY | aY | ε
2° passo
S0 → S
S → aSb | bY | Ya **| b | a**
Y → bY | aY **| b | a**
3° passo
S0 → **aSb | bY | Ya | b | a**
S → aSb | bY | Ya | b | a
Y → bY | aY | b | a
4° passo
S0 → a**X** | bY | Ya | b | a
S → a**X** | bY | Ya | b | a
Y → bY | aY | b | a
X → Sb

S0 → **P**X | **Q**Y | Y**P** | b | a
S → **P**X | **Q**Y | Y**P** | b | a
Y → **Q**Y | **P**Y | b | a
X → S**Q**
P → a
Q → b
FIM
S0 → PX | QY | YP | b | a
S → PX | QY | YP | b | a
Y → QY | PY | b | a
X → SQ
P → a
Q → b

G3

1° passo

    S0 → E

    E → E + T | T

    T →T × F | F

    F → (E) | a

2° passo

    S0 → E

    E → E + T | T

    T →T × F | F

    F → (E) | a

3° passo

    S0 → **E+T | T**

    E → E+T | T

    T →T×F | F

    F → (E) | a

    S0 → E+T | **T×F | F**

    E → E+T | **T×F | F**

    T →T×F | F

    F → (E) | a

    S0 → E+T | T×F | **(E) | a**

    E → E+T | T×F | **(E) | a**

    T →T×F | **(E) | a**

    F → (E) | a

4° passo

    S0 → E+T | T×F | (**Z** | a

    E → E+T | T×F | (**Z** | a

    T →T×F | (**Z** | a

    F → (**Z** | a

    Z → E)

    S0 → E**W** | T**Y** | (Z | a

    E → E**W** | T**Y** | (Z | a

    T →T**Y** | (Z | a

    F → (Z | a

    Z → E)

    Y →×F

    W→+T

    S0 → EW | TY | **L**Z | a

    E → EW | TY | **L**Z | a

    T →TY | **L**Z | a

    F → **L**Z | a

    Z → E**M**

    Y → **N**F

    W→ **O**T

L → (
M →)
N → ×
O → +

FIM

S0 → EW | TY | LZ | a
E → EW | TY | LZ | a
T →TY | LZ | a
F → LZ | a
Z → EM
Y → NF
W→ OT
L → (
M →)
N → ×
O → +