Computability, Complexity and Languages by Martin D. Davis, Ron Sigal and Elaine J. Weyuker. Second Edition.

Page 25, Exercises:

7. Let gcd(X1, X2) be the greatest common divisor of x1 and x2, Write a program in $P$ that computes gcd.

 Y 🡨 min(X1, X2)

 Z 🡨 max(X1, X2)

 IF Y ≠ 0 GOTO A

 Y 🡨 Y + 1

 GOTO E

[A] IF R(X1, Y) = 0 and R(X2, Y) = 0 GOTO E

 Y 🡨 Y – 1

 GOTO A