

Elis Sobyah
Discrete Math

12-Jan-2014
HW 8

Problem Set:
Section 5.4; 4, 8, 10

4) $\text{gcd}(12, 17)$
 $\begin{matrix} a \\ n \end{matrix} \quad \begin{matrix} b \\ b \end{matrix}$

Step	Action
1	$a \neq 0$
2	$\text{gcd}(17 \bmod 12, 12)$ $\text{gcd}(\begin{matrix} 5 \\ a \end{matrix}, \begin{matrix} 12 \\ b \end{matrix})$
3	$a \neq 0$
4	$\text{gcd}(12 \bmod 5, 5)$ $\text{gcd}(\begin{matrix} 2 \\ a \end{matrix}, \begin{matrix} 5 \\ b \end{matrix})$
5	$a \neq 0$
6	$\text{gcd}(5 \bmod 2, 2)$ $\text{gcd}(\begin{matrix} 1 \\ a \end{matrix}, \begin{matrix} 2 \\ b \end{matrix})$
7	$a \neq 0$
8	$\text{gcd}(2 \bmod 1, 1)$ $\text{gcd}(\begin{matrix} 0 \\ a \end{matrix}, \begin{matrix} 1 \\ b \end{matrix})$
9	$a = 0$
10	return b
11	$\text{gcd}(12, 17) = 1$

$$8) a_0 = 2$$

$$\sum_{a_0=2}^{\infty} (a_0+2) + (a_1+2) + \dots + (a_{n-1}+2)$$

10)

Procedure max($a_1, a_2, a_3, \dots, a_n$: ints)

if $n=1$ then max(a_1, a_2, \dots, a_n) := a_1

else

$m := \max(a_1, a_2, \dots, a_n)$ ~~:= a_1~~

if $m > a_n$ then max(a_1, a_2, \dots, a_n) := m

else max(a_1, a_2, \dots, a_n) := a_n