CMPU2012 **Mathematics 2**
Problem Sheet 01

Q1. For each of the following pairs of integers, write a in the form

$$a = bq + r$$

where q is the quotient and r is the remainder, with $0 \leq r < |b|$.

(i). $a = 417, b = 34$

(ii). $a = 1052, b = 29$

(iii). $a = -121, b = 29$

(iv). $a = 2396, b = -11$

(v). $a = -121, b = -29$

Q2. Using "brute force", i.e., by listing factors, find the gcd of

(i). 60 and 84

(ii). 98 and 56

Q3. Using Euclid's algorithm, find the gcd of

(i). 60 and 84

(ii). 98 and 56

(iii). 816 and 612

(iv). 2064499 and 238067

Q4. Calculate the lcm of

(i). 60 and 84

(ii). 98 and 56

(iii). 816 and 612

(iv). 2064499 and 238067

Answers:

Q1.

(i). $417 = 34(12) + 9$

(ii). $1052 = 29(36) + 8$

(iii). $-121 = 29(-5) + 24$

(iv). $2396 = -11(-217) + 9$

(v). $-121 = -29(5) + 24$

Q2.

(i). 12

(ii). 14

Q3.

(i). 12

(ii). 14

(iii). 204

(iv). 751

Q4.

(i). 420

(ii). 392

(iii). 2448

(iv). $654, 446, 183$