(1) one coin worth 19 dollars, another coin worth 14 dollars.
   want to pay for a dollar coffee.
   Pay with 3 $19 coins (total if 57 dollars). Since the coffee costs
   1 dollar, you get change of 4 $14 coins (56 dollars).

(2) one coin worth 109 dollars, other worth 95 dollars. Pay for cup of coffee that
   costs 1 dollar.
   $gcd(109, 95) = 1$
   $109 = 95(1) + 14$
   $95 = 14(6) + 11$
   $14 = 11(1) + 3$
   $11 = 3(3) + 2$
   $3 = 2(1) + 1$

   $1 = 3 - 2(1)$
   $1 = (14-11) - (11 - 3(3))$
   $1 = (109 - 95 - (95 - 6(14))) - 11 + 3(3)$
   $1 = 109 - 95 - 95 + 6((109 - 95) - 95 + 6(109 - 95) + 3(109 - 95 - (95 - 6(14)))$
   $1 = 7(109) - 8(95) - 95 + 6(109) - 6(95) + 3(109) - 3(95) - 3(95) + 18(109 - 95)$
   $1 = 7(109) - 8(95) - 95 + 6(109) - 6(95) + 3(109) - 3(95) - 3(95) + 18(109) - 18(95)$
   $1 = 34(109) - 39(95)$

   You can pay in 34 $109 coins and recieve 39 $95 coins back.

(3) 37 kg and 16 kg.
   $gcd(37, 16) = 1$
   $37 = 16(2) + 5$
   $16 = 5(3) + 1$

   $1 = 16 - 3(5)$
   $1 = 16 - 3(37 - 2(16))$
   $1 = 16 - 3(37) + 6(16)$
   $1 = 7(16) - 3(37)$
   You would put 7 16 kg weights on one side and 3 37 weights on the
   other side to weigh out 1 kg of coffee.