

Jacob McCreary

HW 7-437

10/3/24

1. \$19 coin? You would give the cashier 3 \$ coins and they would give you \$14 coin / 4 \$11 coins in return.

$14x = 19y - 1$

$Sx = 1$

$14y = 19x - 1$

$Sx = -1$

$14y = 19x + 1$

2. \$109 coin? You pay with 37, \$109 coins and 39 \$95 coins.

\$95 coin

$x \bmod 95 = 1, x \bmod 109 = 1, x \bmod 95 = 1, x \bmod 109 = 1$

3. 37kg? You would need to put 71kg on one side, and 3, 37kg weights on the other to be able to measure your coffee of 1kg.

$x \bmod 109$

$x \bmod 95$

$109x = 95y + 1$