//Make sure bid and asks lists are ordered properly

List<Order> runningAskList = BuyExchange.OrderBook.Asks

List<Order> runningBidList = SellExchange.OrderBook.Bids

ArbitrationOpportunity returnOpportunity = null

Int bidCounter = 0

Int askCounter = 0

while(runningBidList[counter].price > runningAskList[counter])

double profit;

Order bid = Byref runningBidList[bidCounter];

Order ask = Byref runningAskList[askCounter];

//Part of the ask order has been fulfilled

if(ask.amount > bid.amount)

profit = (bid.amount \* bid.price – sellingExchange.tradeFee) – (bid.amount \* ask.price + buyExchange.tradeFee)

//Make sure arbitration can still occur with trade fees included

If(profit > minProfit)

if(returnOpportunity == null)

returnOpportunity = new ArbitrationOpportunity()

ask.amount -= bid.amount

returnOpportunity.amount += bid.amount

returnOpportunity.BuyPrice = ask.price

returnOpportunity.SellPrice = bid.price

returnOpportunity.Profit += profit

runningBidList.Remove(bidCounter);

bidCounter++;

//All of the ask order has been filled

else if(ask.amount < bid.amount)

profit = (ask.amount \* bid.price – sellingExchange.tradeFee) – (ask.amount \* ask.price + buyExchange.tradeFee)

//Make sure arbitration can still occur with trade fees included

If(profit > minProfit)

if(returnOpportunity == null)

returnOpportunity = new ArbitrationOpportunity()

bid.amount -= ask.amount

returnOpportunity.amount += ask.amount

returnOpportunity.BuyPrice = ask.price

returnOpportunity.SellPrice = bid.price

returnOpportunity.Profit += profit

runningAskList.Remove(askCounter);

askCounter++;

//The ask and buy orders are for the same amount

Else

Profit = (bid.amount \* bid.price – sellingExchange.tradeFee) – (ask.amount \* ask.price + buyExchange.tradeFee)

//Make sure arbitration can still occur with trade fees included

If(profit > minProfit)

if(returnOpportunity == null)

returnOpportunity = new ArbitrationOpportunity()

returnOpportunity.amount += ask.amount

returnOpportunity.BuyPrice = ask.price

returnOpportunity.SellPrice = bid.price

returnOpportunity.Profit += profit

runningBidList.Remove(bidCounter);

runningAskList.Remove(askCounter);

bidCounter++;

askCounter++;

//If arbitration can occur, add the order books to returnOpportunity

//for recordkeeping and trouble shooting

If(returnOpportunity.sellExchangeOrderBook == null && returnOpportunity.BuyExchangeOrderBook == null)

returnOpportunity.sellExchangeOrderBook = sellExchange.OrderBook

returnOpportunity.buyExchangeOrderBook = buyExchange.OrderBook

**Example 1 (Part of ask order is fulfilled): PASS**

**BuyExchange (tradefee = 0)**

* 1. 400

0.8 402

1.0 410

**SellExchange (tradefee = 0)**

0.6 401

1.0 399

2.8 398

Values in returnOpportunity should be:

Amount = 0.6

BuyPrice = 400

TotalBuyCost = 240.60

SellPrice = 401

TotalSellCost = 240

Profit = 0.6

**Example 2 (All of ask order is fulfilled across multiple bids):**

**BuyExchange (tradefee = 0.25%)**

* 1. 398

0.8 402

1.0 410

**SellExchange (tradefee = 0.25%)**

0.6 402

1.0 401

2.8 398

Values in returnOpportunity should be:

Amount = 1.2

BuyPrice = 398

SellPrice = 401

Profit = 1.8015 = [(1-0.0025)(0.6\*402) + (1-0.0025)(0.6\*401)] – [(1.0025(1.2\*398))]

TotalSellCost = 480.5955

TotalBuyCost = 478.794

**Example 3 (Multiple asks orders are fulfilled across one bids):**

**BuyExchange (tradefee = 0.25%)**

0.2 399

0.4 401

1.0 410

**SellExchange (tradefee = 0.35%)**

0.6 405

1.0 401

2.8 398

Values in returnOpportunity should be:

Amount = 0.6

BuyPrice = 401

SellPrice = 405

Profit = 1.349 = [(1-0.0035)(0.2\*405) + (1-0.0035)(0.4\*405)] – [1.0025(0.2\*399) + 1.0025(0.4\*401)]

TotalBuyCost = 240.8005

TotalSellCost = 242.1495

**Example 4 (Multiple asks orders are fulfilled across multiple bids):**

**BuyExchange (tradefee = 0.25%)**

0.5 397

0.4 399

1.0 410

**SellExchange (tradefee = 0.30%)**

0.2 405

0.5 403

0.4 402

2.8 398

Values in returnOpportunity should be:

Amount = 0.9

BuyPrice = 399

SellPrice = 402

TotalSellCost = [(1-0.003)(0.2\*405)] + [(1-0.003)(0.3\*403)] + [(1-0.003)(0.2\*403)] + [(1-0.003)(0.2\*402)] = 361.8113

TotalBuyCost=[(1+0.0025)(0.2\*397)]+[(1+0.0025)(0.3\*397)]+[(1+0.0025)(0.2\*399)]+[(1+0.0025)(0.2\*399)] = 358.99525

Profit =361.8113 - 358.99525 = 2.81605

**Example 5 (Multiple asks orders are not filled by all the bids):**

**BuyExchange (tradefee = 0.25%)**

0.5 397

1.0 399

1.0 410

**SellExchange (tradefee = 0.30%)**

0.2 405

0.3 403

0.4 402

Values in returnOpportunity should be:

Amount = 0.9

BuyPrice = 399

SellPrice = 402

TotalSellCost = [(1-0.003)(0.2\*405)]+ [(1-0.003)(0.3\*403)]+ [(1-0.003)(0.4\*402)]= 361.6119

TotalBuyCost=[(1+0.0025)(0.2\*397)]+ [(1+0.0025)(0.3\*397)]+ [(1+0.0025)(0.4\*399)]= 358.99525

Profit= 361.6119 – 358.99525 = 2.61665

**Example 6 (Max amount is lower than possible arbitration):**

**Max amount = 1.0**

**BuyExchange (tradefee = 0.25%)**

* 1. 398

0.8 402

1.0 410

**SellExchange (tradefee = 0.25%)**

0.6 402

1.0 401

2.8 398

Values in returnOpportunity should be:

Amount = 1.0

BuyPrice = 398

SellPrice = 401

TotalSellCost = [(1-0.0025) (0.6\*402)] + [(1-0.0025)(0.4\*401)] = 400.596

TotalBuyCost = [1.0025(0.6\*398)] + [1.0025(0.4\*398)] = 398.995

Profit = 1.601 = 400.596 - 398.995

**Example 7 (Max amount is lower than possible arbitration):**

**Max amount = 0.4**

**BuyExchange (tradefee = 0.25%)**

0.2 399

0.4 401

1.0 410

**SellExchange (tradefee = 0.35%)**

0.6 405

1.0 401

2.8 398

Values in returnOpportunity should be:

Amount = 0.4

BuyPrice = 401

SellPrice = 405

Profit = 1.033 = 161.433 - 160.4

TotalSellCost = [(1-0.0035)(0.2\*405)] + [(1-0.0035) (0.2\*405)] = 161.433

TotalBuyCost = 1.0025(0.2\*399) + 1.0025(0.2\*401) = 160.4

**Example 8 (Cannot take full advantage of arbitration due to lack of funds; amount is rounded down to 8 decimal places)**

**Max amount = 10**

**USD in buy exchange = $100.00**

**BuyExchange (tradefee = 0.25%)**

1.0 405

**SellExchange (tradefee = 0.35%)**

1.0 410

TotalBuyCost (to get amount) = 100 = 1.0025(amount \* 405)

Amount = 0.24629783565

RoundedAmount = 0.24629783

TotalBuyCost (post-round) = 99.9602775 = 1.0025(0.24629783\*405)

TotalSellCost = 100.588703 = [(1-0.0035)( 0.24629783\*410)]

Profit = 0.628675226 = 100.588703 – 99.9602775

BuyPrice = 405

SellPrice = 410

**Example 9 (Cannot take full advantage of arbitration due to lack of funds; amount is rounded down to 8 decimal places)**

**Max amount = 10**

**USD in buy exchange = $100.00**

**BuyExchange (tradefee = 0.25%)**

0.2 399

0.4 401

1.0 410

**SellExchange (tradefee = 0.35%)**

0.6 405

1.0 401

2.8 398

First Loop:

Buy cost = 0.2 \* 399 \* 1.0025 = 79.9995

sell cost = 0.2 \* 405 \* (1-0.0035) = 80.7165

money Left = 20.0005

btc left = 9.8

profit = 80.7165 - 79.9995 = 0.717

Second loop:

Buy cost(to get amount) = 20.005 = 401\*1.0025\*amount

Amount = 0.04975217815809603174109613746183

RoundAmount = 0.04975217

TotalBuyCost (post-round) = 20.000496720425 = 401\*1.0025\*0.04975217

Sell cost = 0.04975217\*405\*(1-0.0035) = 20.079105149025

Profit = 20.079105149025 - 20.000496720425 = 0.0786084286

Totals:

Total Buy cost = 20.000496720425+79.9995 = **99.999996720425**

Total Sell cost = 20.079105149025 + 80.7165 = **100.795605149025**

Profit = **0.7956084286**

amount = **0.24975217**

buy price = **401**

sell price = **405**

**Example 10 (Cannot take full advantage of arbitration due to lack of funds across multiple asks)**

**Max amount = 10**

**USD in buy exchange = $200.00**

**Note: In the unit test, the buy exchange is Kraken. Kraken rounds their total costs to 4 decimal places, which is how the buy cost in the second loop is rounded. This has a small effect on the total amount.**

**BuyExchange (tradefee = 0.25%)**

0.2 418

0.1 419

1.0 420

**SellExchange (tradefee = 0.35%)**

0.2 430

0.24 429

1.0 425

First loop:

Buy cost = 0.2\*418\*1.0025 = 83.809

Sell cost = 0.2\*430\*(1-0.0035) = 85.699

Profit = 1.89

Amount = 0.2

Money left = 116.191

Btc left = 9.8

Second loop:

Buy cost = 0.1\*419\*1.0025 = 42.00475

Sell cost = 0.1\*429\*(1-0.0035) = 42.74985

Profit = 0.7451

Amount =0.1

Money left = 74.18625

Btc left = 9.7

Third loop:

Buy cost = 0.14\*420\*1.0025 = 58.947

Sell cost = 0.14\*429\*(1-0.0035)= 59.84979

Profit = 0.90279

Amount = 0.14

Money left = 15.23925

Btc left = 9.56

Fourth loop;

Buy cost(to get amount) = 15.23925 = 420\*1.0025\*amount

Amount = 0.03619344495903099394371214820093

RoundedAmount = 0.03619344

TotalBuyCost (post-round) = 420\*1.0025\*0.03619344 = 15.239247912

Sell cost = 0.03619344\*425\*(1-0.0035) = 15.328374258

Profit = 0.089126346= 15.328374258-15.239247912

Money left = 0.039345

Btc left = 9.5239

Totals:

Total buy cost = 15.239247912 + 58.947 + 42.00475 + 83.809 = **199.999997912**

Total buy cost (rounded to 4 decimal places because it is Kraken = **200.000**

Total sell cost = 15.328374258+59.84979+42.74985+85.699 = **203.627014258**

Profit 0.089126346+0.90279+0.7451+1.89 = **3.627016346**

Profit (rounded) = 203.627014258 - 200.000 **=** **3.627014258**

Amount = 0.03619344+0.14+0.1+0.2 = **0.47619344**

Buy price = **420**

Sell price = **425**

**Example 11 (Part of ask order is fulfilled,** **still profitable after taking into account transfer fee)**

**BuyExchange (tradefee = 0, transferFee = 0.0005)**

* 1. 400

0.8 402

1.0 410

**SellExchange (tradefee = 0)**

0.6 401

1.0 399

2.8 398

Values in returnOpportunity should be:

Amount = 0.6

BuyPrice = 400

TotalBuyCost = 240.60

SellPrice = 401

TotalSellCost = 240

Profit =(401\*0.6) - (400\*0.6) – ((401+400)/2\*0.0005) = 0.39975

**Example 12 (Part of ask order is fulfilled,** **not profitable after taking into account transfer fee)**

**BuyExchange (tradefee = 0, transferFee = 0.0005)**

* 1. 400

0.8 402

1.0 410

**SellExchange (tradefee = 0)**

0.6 400.25

1.0 399

2.8 398

Values in returnOpportunity should be:

Amount = 0.6

BuyPrice = 400

TotalBuyCost = 240

SellPrice = 401

TotalSellCost = 240.15

Profit =(400.25\*0.6) - (400\*0.6) – ((400.25+400)/2\*0.0005) = -0.05

**Example 13 –** **Amount is floor rounded to the minimum of the two exchanges**

**BuyExchange (tradefee = 0, round digits = 8)**

* 1. 400

0.8 402

1.0 410

**SellExchange (tradefee = 0, round digits = 4)**

0.65479204 401

1.0 399

2.8 398

Values in returnOpportunity should be:

Amount = 0.65491204

RoundedAmount = 0.6547

BuyPrice = 400

TotalBuyCost = 261.88 = 0.6547\*400

SellPrice = 401

TotalSellCost = 262.5347 = 0.6547\*401

Profit = 0.6547 = 262.5347-261.88

**Example 14 – Buy amount rounding does not cause sell amount to be recalculated. Sell amount is rounded to the sell amount number of decimal places (****fee type = btc)**

**BuyExchange (tradefee = 0, round digits = 8, fee type = btc)**

* 1. 398

0.8 402

1.0 410

**SellExchange (tradefee = 0, round digits = 8)**

0.65479204 401

1.0 399

2.8 398

Values in returnOpportunity should be:

Buy Amount = 0.6564290201= 0.65479204\*(1+0.0025)

Rounded buy amount = 0.65642902

Sell amount = 0.65478794745 = 0.65642902\*(1-0.0025)

**Note** – Sell amount is regular rounded here, since that brings it closer to the actual value.

Rounded sell amount = 0.65478795

BuyPrice = 398

TotalBuyCost = 261.25874996 = 0.65642902\*398

SellPrice = 401

TotalSellCost = 261.650973062175 = 0.65478795\*401\*(1-0.0035)

Profit = 0.392223102175 = 261.650973062175-261.25874996

**Example 15 – Buy amount get changed during rounding, and thus sell amount needs to be recalculated (fee type = btc).**

**Max amount = 10.9872**

**BuyExchange (tradefee = 0.25%, round digits = 8, fee type = btc)**

1.0 405

**SellExchange (tradefee = 0.35%, round digits = 8)**

1.0 410

TotalBuyCost (to get amount) = 10.9872 = buy amount \* 405

Buy Amount = 0.02712888888888888888888888888889

Rounded Buy Amount = 0.02712888

Sell Amount = 0.0270610578= 0.02712888\*(1-0.0025)

**Note** – Sell amount is regular rounded here, since that brings it closer to the actual value.

Rounded sell amount = 0. 02706106

TotalBuyCost (post-round) = 10.9871964 = 0.02712888\*405

TotalSellCost = 11.0562019789 = (1-0.0035)(0. 02706106\*410)

Profit = 0.0690055789 = 11.0562019789–10.9871964

BuyPrice = 405

SellPrice = 410

**Example 16 – Sell amount is limited by the amount of btc that is in the sell exchange. (fee type = btc).**

**Available btc to sell =** **0.45127846**

**BuyExchange (tradefee = 0.25%, round digits = 8, fee type = btc)**

1.0 405

**SellExchange (tradefee = 0.35%, round digits = 8)**

1.1 410

Buy amount = 0.45240665615 = 0.45127846\*(1+0.0025)

Rounded buy amount = 0.45240665

Sell amount = 0.451275633375 = 0.45240665\*(1-0.0025)

Rounded sell amount = 0.45127563

TotalBuyCost (post-round) = 183.22469325 = 0.45240665\*405

TotalSellCost = 184.37542777095 = (1-0.0035)(0.45127563\*410)

Profit = 1.15073452095 = 184.37542777095–183.22469325

BuyPrice = 405

SellPrice = 410

**Example 17 – Buy order is slightly bigger than the sell amount, but not big enough to cover the btc buy fee. So the buy order is actually the limiting factor.**

**BuyExchange (tradefee = 0.25%, round digits = 8, fee type = btc)**

1.002 405

**SellExchange (tradefee = 0.35%, round digits = 8)**

1.0 410

Buy price = 410

Sell price = 405

Buy amount = 1.002

Sell amount = 0.999495 = 1.002\*(1-0.0025)

TotalBuyCost = 405.81 = 1.002\*405

TotalSellCost = 408.358674675= (0.999495\*410)(1-0.0035)

Profit = 2.548674675 = 408.358674675-405.81

**Example 18 – Buy and sell orders are the same after taking into account buy fee. Fee type = btc**

**BuyExchange (tradefee = 0.25%, round digits = 8, fee type = btc)**

0.99999375 405

**SellExchange (tradefee = 0.35%, round digits = 8)**

* 1. 410

Buy price = 406

Sell price = 409

Buy amount = 0.99999375

Sell amount = 0.997493765625

**Note** – Sell amount is regular rounded here, since that brings it closer to the actual value.

Sell amount (rounded) = 0.99749377

TotalBuyCost = 404.99746875 = 0.99999375\*405

TotalSellCost = 407.54104214005 = (0.99749377\*410)(1-0.0035)

Profit = 2.54357339005= 407.54104214005-404.99746875

**Example 19** – Buy amount is calculated from sell amount, but then limited by the amount of fiat available.

Available fiat: $50

**BuyExchange (tradefee = 0.25%, round digits = 8, fee type = btc)**

1.0 405

**SellExchange (tradefee = 0.35%, round digits = 8)**

* 1. 410

Buy cost = 50 = 405\*amount

Buy amount = 0.12345679012345679012345679012346

Buy amount (rounded) = 0.12345679

Buy cost (after rounding) =49.99999995 = 405\*0.12345679

**Note** – Sell amount is regular rounded here, since that brings it closer to the actual value.

Sell amount = 0.123148148025 = 0.12345679\*(1-0.0025)

Sell amount (rounded) = 0.12314815

Sell cost = 50.31402390475= 0.12314815\*410\*(1-0.0035)

Profit =0.31402395475 = 50.31402390475-49.99999995

**Example 20** – Limiting order is buy, buy amount is greater than the available btc, and then fiat amount is less than the cost of the determined buy amount. Buy fee type = fiat.

Available fiat: $20.20

Available btc: 0.084

**BuyExchange (tradefee = 0.25%, round digits = 8)**

1.0 405

**SellExchange (tradefee = 0.35%, round digits = 8)**

1.024 410

Buy cost = 20.20 = 405\*amount\*(1+0.025)

Buy amount = 0.04975216280286936978541301068317

Buy amount (rounded) = 0.04975216

Buy cost (after rounding) = 20.199998862 = 405\*0.04975216\*(1+0.0025)

Sell amount = 0.04975216

Sell cost = 20.3269912504 = 0.04975216\*410\*(1-0.0035)

Profit =0.1269923884 = 20.3269912504-20.199998862

**Example 21** – Limiting order is sell, available btc is greater than the sell amount, fiat is less than the cost of the determined buy amount. Fee type = fiat.

Available fiat: $20.20

Available btc: 0.87

**BuyExchange (tradefee = 0.25%, round digits = 8)**

1.0 405

**SellExchange (tradefee = 0.35%, round digits = 8)**

0.78 410

Buy cost = 20.20 = 405\*amount\*(1+0.025)

Buy amount = 0.04975216280286936978541301068317

Buy amount (rounded) = 0.04975216

Buy cost (after rounding) = 20.199998862 = 405\*0.04975216\*(1+0.0025)

Sell amount = 0.04975216

Sell cost = 20.3269912504 = 0.04975216\*410\*(1-0.0035)

Profit =0.1269923884 = 20.3269912504-20.199998862

**Example 22** – Limiting order is sell, sell amount is greater than available btc, available fiat is more than the cost of the determined buy amount. Buy fee type = fiat.

Available fiat: $1000

Available btc: 0.09

**BuyExchange (tradefee = 0.25%, round digits = 8)**

1.0 405

**SellExchange (tradefee = 0.35%, round digits = 8)**

0.78 410

Buy amount = 0.09

Buy cost = 36.541125 = 0.09\*405\*(1+0.0025)

Sell amount = 0.09

Sell cost = 36.77085 = 0.09\*410\*(1+0.0035)

Profit = 0.229725 = 36.77085-36.541125

**Example 23** – Limiting order is sell, sell amount is greater than available btc, available fiat is less than the cost of the determined buy amount. Buy fee type = fiat.

Available fiat: $30.01

Available btc: 0.09

**BuyExchange (tradefee = 0.25%, round digits = 8)**

1.0 405

**SellExchange (tradefee = 0.35%, round digits = 8)**

0.78 410

Buy cost = 30.01 = amount\*405\*(1+0.0025)

Buy amount = 0.07391398048089652412179427973277

Buy amount (rounded) = 0.07391398

Buy cost = 30.00999980475 = 0.07391398\*405\*(1+0.0025)

Sell amount = 0.07391398

Sell cost = 30.1986652387 = 0.07391398\*410\*(1-0.0035)

Profit = 0.18866543395 = 30.1986652387-30.00999980475

**Example 24** – Limiting order is buy, available btc is greater than the buy amount, available fiat is greater than the cost of the determined buy amount. Buy fee type = btc.

Available fiat: $1000

Available btc: 20

**BuyExchange (tradefee = 0.25%, round digits = 8)**

0.21482587 405

**SellExchange (tradefee = 0.35%, round digits = 8)**

0.35417808 410

Buy amount = 0.21482587

Total buy cost = 87.00447735 = 0.21482587\*405

Sell amount =0.214288805325 = 0.21482587\*(1-0.0025)

Sell amount (rounded) = 0.21428881

Total sell cost =87.55090765765= 0.21428881\*410\*(1-0.0035)

Profit = 0.54643030765 = 87.55090765765-87.00447735

**Example 25** – Limiting order is buy, buy amount is greater than the available btc, available fiat is greater than the cost of the available btc. Buy fee type = btc.

Available fiat: $1000

Available btc: 0.12478543

**BuyExchange (tradefee = 0.25%, round digits = 8)**

0.21482587 405

**SellExchange (tradefee = 0.35%, round digits = 8)**

0.35417808 410

Buy amount = 0.12478543

Total buy cost = 50.53809915 = 0.12478543\*405

Sell amount =0.124473466425 = 0.12478543\*(1-0.0025)

Sell amount (rounded) = 0.12447347

Total sell cost = 50.85550327055 = 0.12447347\*410\*(1-0.0035)

Profit = 0.31740412055 = 50.85550327055-50.53809915

**Example 26** – Limiting order is buy, buy amount is greater than the available btc, available fiat is less than the cost of the available btc. Buy fee type = btc.

Available fiat: $25.01

Available btc: 0.12478543

**BuyExchange (tradefee = 0.25%, round digits = 8)**

0.21482587 405

**SellExchange (tradefee = 0.35%, round digits = 8)**

0.35417808 410

Total buy cost = 25.01 = amount\*405

Buy amount = 0.06175308641975308641975308641975 = 25.01/405

Buy amount (rounded) = 0.06175308

Total buy cost =25.0099974 = 0.06175308\*405

Sell amount =0.0615986973 = 0.06175308\*(1-0.0025)

Sell amount (rounded) = 0.06159870

Total sell cost = 25.1670728655= 0.06159870\*410\*(1-0.0035)

Profit = 0.1570754655= 25.1670728655-25.0099974

**Example 27** – Limiting order is sell, available btc is greater than the determined buy amount, available fiat is less than the cost of the available btc. Buy fee type = btc.

Available fiat: $25.01

Available btc: 0.35987104

**BuyExchange (tradefee = 0.25%, round digits = 8)**

0.91482587 405

**SellExchange (tradefee = 0.35%, round digits = 8)**

0.35417808 410

Buy cost = 25.01 = amount\*405

Buy amount = 0.06175308641975308641975308641975 = 25.01/405

Buy amount (rounded) = 0.06175308

Total buy cost =25.0099974 = 0.06175308\*405

Sell amount =0.0615986973 = 0.06175308\*(1-0.0025)

Sell amount (rounded) = 0.06159870

Total sell cost = 25.1670728655 = 0.06159870\*410\*(1-0.0035)

Profit = 0.1570754655= 25.1670728655-25.0099974

**Example 28** – Limiting order is sell, available btc is less than the determined buy amount, available fiat is less than the cost of the available btc. Buy fee type = btc.

Available fiat: $25.01

Available btc: 0.299999999

**BuyExchange (tradefee = 0.25%, round digits = 8)**

0.91482587 405

**SellExchange (tradefee = 0.35%, round digits = 8)**

0.35417808 410

Buy cost = 25.01 = amount\*405

Buy amount = 0.06175308641975308641975308641975 = 25.01/405

Buy amount (rounded) = 0.06175308

Total buy cost =25.0099974 = 0.06175308\*405

Sell amount =0.0615986973 = 0.06175308\*(1-0.0025)

Sell amount (rounded) = 0.06159870

Total sell cost =25.1670728655= 0.06159870\*410\*(1-0.0035)

Profit = 0.1570754655= 25.1670728655-25.0099974

**Example 29 –** Buy exchange has less digits than sell exchange

Available fiat: $20

Available btc: 0.1

**BuyExchange (tradefee = 0.25%, round digits = 3)**

0.012 405

**SellExchange (tradefee = 0.25%, round digits = 8)**

0.0006 410

0.0006 409.99

First round:

Amount = 0.0006