Currency Exchange & Commission

Practice Worksheet (Problem Solving)

I Do

Sophie wants to exchange 1200 US dollars for euros. She compares two bureaux de change.
Bureau A offers 1 US dollar $= 0.92$ euros and charges no commission.
Bureau B offers 1 US dollar $= 0.95$ euros and charges a fee of 20 US dollars. This fee is deducted from Sophie's 1200 US dollars before the remaining US dollars are converted to euros.

Which bureau gives Sophie more euros, and how many more euros does it give?
Show all your working.

.....

(Total for Question is 4 marks)

We Do

Ash wants to exchange 800 euros for US dollars. He compares two bureaux de change.
Bureau A offers 1 euro $= 1.25$ US dollars and charges no commission.
Bureau B offers 1 euro $= 1.30$ US dollars and charges a fee of 25 euros. This fee is deducted from Ash's 800 euros before the remaining euros are converted to US dollars.

Which bureau gives Ash more US dollars, and how many more US dollars does it give?
Show all your working.

.....

(Total for Question is 4 marks)

You Do 1

Michelle wants to exchange 1000 US dollars for Canadian dollars. She compares two bureaux de change.
Bureau A offers 1 US dollar $= 1.18$ Canadian dollars and charges no commission.
Bureau B offers 1 US dollar $= 1.20$ Canadian dollars and charges a fee of 30 US dollars. This fee is deducted from Michelle's 1000 US dollars before the remaining US dollars are converted to Canadian dollars.

Which bureau gives Michelle more Canadian dollars, and how many more Canadian dollars does it give?
Show all your working.

.....

(Total for Question is 4 marks)

You Do 2

Rob returns from holiday with 1200 euros and wants to exchange them for US dollars. He compares two bureaux de change.
Bureau A offers 1 US dollar $= 1.25$ euros and charges no commission.
Bureau B offers 1 US dollar $= 1.20$ euros and charges a fee of 36 euros. This fee is deducted from Rob's 1200 euros before the remaining euros are converted to US dollars.

Which bureau gives Rob more US dollars, and how many more US dollars does it give?
Show all your working.

.....

(Total for Question is 4 marks)

You Do 3

Emily wants to exchange 2000 euros for Japanese yen. She compares two bureaux de change.
Bureau A offers 1 euro $= 190$ yen and charges a 2% commission. This commission is deducted from Emily's 2000 euros before the remaining euros are converted to yen.
Bureau B offers 1 euro $= 188$ yen and charges a flat fee of 15 euros, deducted before conversion.

Which bureau gives Emily more yen, and how many more yen does it give?
Show all your working.

.....

(Total for Question is 4 marks)

Challenge 1

Paul goes on holiday to Spain.
Before he leaves, he exchanges 1200 US dollars into euros at an exchange rate of 1 US dollar $= 1.18$ euros.

During his holiday, Paul spends 1056 euros.

When he returns home, he exchanges all of his remaining euros back into US dollars at an exchange rate of 1 US dollar $= 1.20$ euros. The bureau charges a fixed fee of 5 US dollars, which is deducted after the euros have been converted into US dollars.

Work out how much money, in US dollars, Paul receives back.
Show all your working clearly.

.....US dollars

(Total for Question is 4 marks)

Challenge 2

Keeley wants to exchange x euros into US dollars. She compares two bureaux de change.
Bureau A offers 1 euro $= 1.26$ US dollars and charges no commission.
Bureau B offers 1 euro $= 1.30$ US dollars and charges a fixed fee of 24 euros, which is deducted from x euros before conversion.

(a) Find the value of x for which both bureaux give Keeley the exact same number of US dollars.

$x =$ ..... *(3 marks)*

(b) State which bureau gives Keeley more US dollars if she wants to exchange 900 euros. Give a reason for your answer.

(1 mark)

(Total for Question is 4 marks)

Extreme Challenge

Ben buys a camera in Tokyo for $117\,600$ yen.
He pays using a credit card that converts yen to US dollars at a rate of 1 US dollar $= 196$ yen, and then adds a 2.5% foreign transaction fee to the cost in US dollars.

When he returns home, Ben sells the camera to a buyer in France for 840 euros.
He converts the 840 euros into US dollars at a rate of 1 US dollar $= 1.20$ euros, with no commission.

Work out Ben's percentage profit.
Give your answer correct to 1 decimal place.
You must show all of your working clearly.

.....%

(Total for Question is 5 marks)

Worked Answers

I Do (Sophie)
Bureau A: $1200 \times 0.92 = 1104$ euros.
Bureau B: Remaining US dollars $= 1200 - 20 = 1180$.
$1180 \times 0.95 = 1121$ euros.
Difference $= 1121 - 1104 = 17$ euros.
Answer: Bureau B gives 17 euros more.

We Do (Ash)
Bureau A: $800 \times 1.25 = 1000$ US dollars.
Bureau B: Remaining euros $= 800 - 25 = 775$ euros.
$775 \times 1.30 = 1007.50$ US dollars.
Difference $= 1007.50 - 1000 = 7.50$ US dollars.
Answer: Bureau B gives 7.50 US dollars more.

You Do 1 (Michelle)
Bureau A: $1000 \times 1.18 = 1180$ Canadian dollars.
Bureau B: Remaining US dollars $= 1000 - 30 = 970$ US dollars.
$970 \times 1.20 = 1164$ Canadian dollars.
Difference $= 1180 - 1164 = 16$ Canadian dollars.
Answer: Bureau A gives 16 Canadian dollars more.

You Do 2 (Rob)
Bureau A: $1200 \div 1.25 = 960$ US dollars.
Bureau B: Remaining euros $= 1200 - 36 = 1164$ euros.
$1164 \div 1.20 = 970$ US dollars.
Difference $= 970 - 960 = 10$ US dollars.
Answer: Bureau B gives 10 US dollars more.

You Do 3 (Emily)
Bureau A: Commission $= 2\%$ of 2000 euros $= 40$ euros.
Remaining euros $= 2000 - 40 = 1960$ euros.
$1960 \times 190 = 372\,400$ yen.
Bureau B: Remaining euros $= 2000 - 15 = 1985$ euros.
$1985 \times 188 = 373\,180$ yen.
Difference $= 373\,180 - 372\,400 = 780$ yen.
Answer: Bureau B gives 780 yen more.

Challenge 1 (Paul)
1. Convert 1200 US dollars to euros:
$1200 \times 1.18 = 1416$ euros.
2. Subtract the amount spent:
$1416 - 1056 = 360$ euros remaining.
3. Convert remaining euros back to US dollars:
$360 \div 1.20 = 300$ US dollars.
4. Deduct the 5 US dollar fixed fee:
$300 - 5 =$ **295 US dollars**.

Challenge 2 (Keeley)
(a) Form an equation setting the US dollars from both bureaux equal:
$1.26x = 1.30(x - 24)$
Expand the bracket:
$1.26x = 1.30x - 31.2$
Rearrange to collect x terms:
$31.2 = 1.30x - 1.26x$
$0.04x = 31.2$
$x = \frac{31.2}{0.04} =$ **780**.

(b) Bureau B. Since 900 euros is greater than the break-even amount of 780 euros, Bureau B's higher exchange rate (1.30 vs 1.26) outweighs its fixed 24 euro fee.

Extreme Challenge (Ben)
1. Find the base cost of the camera in US dollars:
$117\,600 \div 196 = 600$ US dollars.
2. Add the 2.5% foreign transaction fee:
Total cost $= 600 \times 1.025 = 615$ US dollars.
3. Convert the selling price from euros to US dollars:
Selling price $= 840 \div 1.20 = 700$ US dollars.
4. Calculate the profit and percentage profit:
Profit $= 700 - 615 = 85$ US dollars.
Percentage profit $= \frac{85}{615} \times 100\% = 13.8211\ldots\%$
Correct to 1 decimal place: **13**.**8**%.