



Name: \_\_\_\_\_

Class: \_\_\_\_\_ Date: \_\_\_\_\_

## In SGD Please

*An extension of "The expanding world of digital currencies."*

Read "**The expanding world of digital currencies**," (page 20, *What's Up* October 2017). Credit and debit cards have transformed the way adults pay for goods and services. Almost anywhere in the world, we can pay for just about anything with credit or debit cards. But, we need to understand how they work.

### MATH PROBLEMS

Kim has a debit card and a credit card issued by ABC Bank where she has an account. When ABC Bank receives a request for a debit card or a credit card payment from a merchant in Europe, it does the following.

- It converts the transaction amount from euros to USD, and then from USD to SGD.
- On the converted SGD amount, it charges a foreign transaction fee of 2.5% if a credit card is used, or 3% if a debit card is used.
- Each month, it charges an annual compound interest of 22% on any outstanding credit card balance. That means the monthly charge is the total amount owed (called the Principal amount) plus any previous interest.

Kim went on a trip to Europe. She had a balance of SGD10,229.58 in her ABC Bank account when she bought a pair of jeans for €128.948.

The Bank's currency conversion rates at the time of her purchase were

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|----------------|------------------|
| 1 USD = €0.909 | 1 USD = 1.41 SGD |
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Work in pairs to solve the following problems. Assume that no other charges were incurred as no other transactions were made against the two cards. (Round off your answers to 2 decimal places.)

1. Calculate Kim's outstanding credit card balance, if she used her credit card to pay for the purchase of the jeans.
2. If she used her credit card to pay, calculate her bank balance soon after the bank settled the amount for the purchase.
3. Calculate the debt incurred by this credit card purchase if she only pays the amount as a lump sum by the 3<sup>rd</sup> due date since the purchase.
4. If she used her debit card to pay, calculate her bank balance after the bank settled the amount for the purchase.