Workplace Mathematics 11
UNIT 2 Project: FINANCIAL SERVICES
LG's 4 - 6

Read through the information below and use it to complete the sections which follow. Be sure to answer each question and show your work clearly to demonstrate how you got your answers. **Total** */25*

Part A: Interest

You have $10 000 to invest. You can invest the entire amount in a simple interest account which pays 5% annually for 10 years or you can invest the entire amount at 4.35% compounded annually for 10 years. Complete the charts below to show your calculations for both options.

Simple Interest   (3 marks for the chart)

Year	Principal	Interest Rate	Interest Earned	Yearly Total
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

1a) For this option (simple interest), what is the total amount of interest earned at the end of 10 years?   (1 mark)

1b) How much money would you have in total if you chose to invest your $10 000 with this simple interest option?   (1 mark)

Compound Interest   (3 marks for the chart)

Year	Principal	Interest Rate	Interest Earned	Yearly Total
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

2a) For this option (compound interest), what is the total amount of interest earned at the end of 10 years?   (1 mark)

2b) How much money would you have in total if you chose to invest your $10 000 with this compound interest option?   (1 mark)

3. Comparing the two charts over the full 10 years,   (2 marks)
a) which option is better to invest your money with?
b) why?

4. Comparing the two charts over only 2 years,   (2 marks)
a) which option is better to invest your money with?
b) why?

5. It may be faster to complete your calculations using the interest formulas rather than using a chart. Using the formulas below, calculate the total amount you would have at the end of the full 10 years for each option and check your answers with the chart.
a) Simple interest   (1 mark)   b) Compound interest   (1 mark)
   $I = Prt$ $A = P(1+r)^n$

Part B: Credit Card Statement

Below is a credit card statement for John Smith who took a trip across Canada. John used his credit card to pay for all of his meals, travel, accommodations and purchases during his trip. Use the statement below to answer the questions on the next page:

Royal Credit Union
Statement

Statement date: Nov 28, 2002
Due date: December 12, 2002

Date	Transaction	Debit	Credit	Balance
Nov. 12	K-town	$50.54		$50.54
Nov. 12	Olive's Sea food	$42.55		
Nov. 12	Toys-for-Tots	$19.11		
Nov. 13	Paradise hotel	$125.72		
Nov. 13	Riverside Restaurant	$$63.54		
Nov. 14	Keaton's Dept Store	$75.00		
Nov. 14	Special Gifts'n'More	$62.25		
Nov. 14	Cash advance	$150.00		
Nov. 15	Highway Hotel	$45.00		
Nov. 16	Jasper jazz Club	$48.56		
Nov. 16	Gas Pump	$35.00		
Nov. 17	Jasper Inn	$189.00		
Nov. 17	Nik Nak Shack	$68.33		
Nov. 18	Galant Hair Salon	$32.75		
Nov. 18	Highwayside Full Serve	$48.00		
Nov. 18	Flaxcombe museum	$15.49		
Nov. 19	Winnipeg mall	$126.88		
Nov. 19	Pump-n-Fill Gas	$39.00		
Nov. 19	5-Star Hotel	$138.41		
Nov. 20	Western Star Restaurant	$72.65		
Nov. 20	Airfare	$350.00		
Nov. 20	U Drive It Car Rental	$532.12		
Nov. 21	Nunavut Inn	$110.00		
Nov. 21	Polarbear Cruise	$212.50		
Nov. 21	Restaurant	$60.78		
Nov. 22	Airfare	$872.00		
Previous	Purchases & Interest	Payments	Current balance	Minimum Payment
$0.00	$3585.18	$0.00	$3585.18	$252.00

See next page for questions …

Part B: Credit Card Statement (refer to previous page for information):
(1 mark each)
1. What does the statement list as John's previous balance?

2. If John only pays the minimum payment, how much will his current balance be on his next month's statement? (Ignore any interest owed for the cash advance)

3. What date is his credit card payment due?

4. Assume John pays off his credit card bill <u>completely</u> on the due date. The interest rate for the credit card purchases is 21% and the interest rate for cash advances is 19.2%.
a) How much interest would he owe on his credit card purchases?

b) How much interest would he owe on the cash advance if he pays it all off on the due date? Remember that interest is calculated on cash advances starting the day after you get the money. (hint: November has 30 days)

Part C: Car Loan (1 mark each)
Jessica wants to buy her first car. She has found a used vehicle for $5 500. She has saved $1 000 to put towards the purchase of her car but she must borrow the balance from her bank at 6.5% annual simple interest, paid monthly for a period of 3 years.

1. How much does Jessica need to borrow?

2. How much interest does she pay in total over the three years?

3. How much will she pay in total for the loan?

4. What will her monthly payment be?