ALBERTA DISTANCE LEARNING CENTRE
Mathematics 30-3 Online
MAT3793
Unit F
Small Business Project

Summary

	Marks Earned	Total Marks	Percent
Small Business Project		38	

Teacher's Comments:

Teacher's Signature

NEW September 2018

Printed in Canada

For Users of Alberta Distance Learning Centre Courseware
Much time and effort is involved in preparing learning materials and activities that meet curricular expectations as determined by Alberta Education. We ask that you respect our work by honouring copyright regulations.

Alberta Distance Learning Centre website:

http://www.adlc.ca

The Internet can be a valuable source of information. However, because publishing to the Internet is neither controlled nor censored, some content may be inaccurate or inappropriate. Students are encouraged to evaluate websites for validity and to consult multiple sources.

Mathematics 30-3 Online

Unit F
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Finance

Submission Instructions

You will submit your assignments online by uploading them to your course in Moodle. Once you log in to your course, you will find more detailed submission instructions provided by your teacher.

Go to this website to learn how to log in to Moodle:
http://quick.adlc.ca/login

If you have further questions about submitting your work, please contact your teacher.

Mathematics 30-3 Online
Unit F Small Business Project

Our Pledge to You:

Enrolling in this course is another step toward an Alberta High School Diploma. Everyone at Alberta Distance Learning Centre is committed to helping students achieve their educational goals. We welcome your contact in person or by phone, fax, e-mail, voice mail, or postal mail.

Advice:

Your achievement in this course is determined by your success in the assessments of each unit. Your responses to assignments indicate your understanding of outcomes established by Alberta Education.

- Before responding to the assigned questions, read all relevant directions for the Assignment and instruction in the course materials, including the appropriate Guide for Learning and any other resources provided.

- When you encounter difficulties, re-read the directions for the Assignment and review the relevant instruction in the Guide for Learning.

- If you require further clarification, contact your Alberta Distance Learning Centre teacher for assistance.

Notice:

You have one opportunity to submit each Assignment.

- Only under exceptional circumstances will your ADLC teacher re-assess your work. Therefore, apply significant effort to each Assignment.

- If your final exam mark is vastly different from your Quiz marks, your teacher may apply discretion in determining your course mark.

Format

You are encouraged to **handwrite** your written work.

If you type your work, be sure to follow these guidelines:

- Include your full name and student file number as a document header.
- Double-space your final copy.
- Staple your printed work to this Assignment.

ADLC Plagiarism Policy (ADLC Administrative Policy 60–1)

Plagiarism is the practice of representing someone else's work or ideas as one's own. It is an academically dishonest practice and is detrimental to a student's knowledge and skill development. ADLC takes a progressive approach to plagiarism to educate and correct the behaviour.

All incidents will be documented and are subject to the consequences outlined below:

First Incident	Second Incident	Third Incident
The student is given zero scores on any work suspected of being plagiarized and given the opportunity to resubmit original work.	The student is given zero scores on any work suspected of being plagiarized and is not given the opportunity to resubmit original work. A letter is sent by the principal to parents and school facilitators outlining this administrative practice and the consequences.	The student is removed from the course in which plagiarized work is suspected and notifications are put into the ADLC Student Information System, barring future registration to the course in question. A withdrawal letter is sent by the principal to parents and school facilitators.

Important

While removal from a course is limited to the course in which the third incident has occurred, the preceding steps can occur across different courses. A student who has been found plagiarizing in Course A and held to the First Incident consequences who then plagiarizes in Course B will move to the Second Incident consequences.

Any further occurrences after the Third Incident in any other courses will result in immediate removal from that course. Ongoing occurrences may result in removal from all courses and barring of registration with ADLC.

Sharing of ADLC Work (ADLC Administrative Policy 60–4)

Plagiarism is the practice of representing someone else's work or ideas as one's own. It is a dishonest practice and is damaging to a student's knowledge & skill development. Plagiarism is addressed in ADLC Administrative Policy 60-01.

The sharing of school work, especially after having been marked by ADLC, to students for the purposes of submitting plagiarized work (either paraphrasing or directly copying student work) is dishonest, and this sharing goes against the Alberta School Act's expectation of students to respect school rules and co-operate with how schools offer education to their students.

ADLC prefers to take a progressive approach to the sharing of work with other students, in order to educate and correct the behaviour.

If a student is currently enrolled in any ADLC course and found to be sharing school work, whether from their current course or another, to others, the following will happen:

First Incidence	Second Incidence
The student is informed that their work has been submitted as plagiarized work by another student; a warning is provided that further submissions of such work, from any course, will be grounds for removal from the current course(s).	The student is removed from all active ADLC courses.

If the student is not currently enrolled in any ADLC course and found to be sharing school work with others, they are informed that their work has been submitted as plagiarized work by another student and, as such, further registrations in any ADLC course will not be permitted. The incident will be recorded on the student's file.

Such actions do not limit ADLC to pursue other remedies (actions), either criminal or civil, for the distribution of its copyrighted materials.

Small Business Project

The skills learned in *Lessons 1*, *2*, and *3* are required to complete this project.

The *Math 30-3 Finance Formula Sheet* is included on the last page. For full marks, show all calculations, steps, and/or explain your answers. State all necessary formulas.

Total marks: 38

Daniel graduated from SAIT with a diploma in Information Technology. He worked at a private company for five years in the computer department troubleshooting as well as setting up databases and computer systems. Daniel plans to open a computer repair business in his home.

Daniel owns a house with a finished basement on the main street in his neighbourhood. The house is on the bus route and has easy access to the major roads in his town. He is willing to drive to different parts of town to make computer repairs, install software, and set up computer systems. He plans to renovate his basement to include a home office.

Daniel lives next door to a seniors' complex. There is a business park across the street. Daniel plans to arrange a meeting with the administrator at the seniors' complex and contact some businesses in the business park. He is making signs to display on his lawn and around the neighbourhood. He is also planning to advertise in the local community newsletter.

Daniel determined that there were no computer repair stores in his neighbourhood. He researched and discovered three computer repair companies in his town that have employees who travel to homes and businesses to fix computers. There are also two stores that sell computers and offer in-store repairs. The closest computer repair company or store that offers computer repairs is five kilometres from Daniel's home.

1. Discuss whether Daniel has proven his business is feasible based on the following factors.

(1)   a. location

(1)   b. market (number of customers)

(1)   c. competition

2. Daniel has been using public transit to go to work. Daniel requires a vehicle to operate his business and is considering two options.

    Option 1: Buying a used car for $11 995.00 including taxes with payments for 4 years at an annual interest rate of 4.9%.

    Option 2: Leasing a car for $210.00 per month for 4 years.

(2)   a. Use the *Monthly Payment Calculator* to calculate the monthly payment for Option 1.

        Payment calculators are linked to the Assignment Submission Page in your Moodle course.

principal	
annual interest rate	
number of monthly payments	
monthly payment	

(2)   b. Calculate the total amount that Daniel pays for the car in Option 1.

(2)   c. Calculate the amount of interest that Daniel pays in Option 1.

(2)   d. Calculate the total amount that Daniel pays for the lease in Option 2.

(2)   e. In four years, the used car will have a value of $6 000.00. How much value did the car
              lose due to depreciation?

(2)   f. Calculate the depreciation per year for the used car that costs $11 995.00.

(2)   g. Should Daniel buy the used car or lease the car? Support your answer using the values
              calculated in *part a* to *part e* above.

(2)   3.   To prepare for the opening of the business, Daniel plans to renovate one of the rooms in his basement, which will cost $1 500.00. He needs to buy tools and equipment to help him work efficiently and this will cost $2 000.00. Daniel wants to buy a desk and some chairs for his office at a cost of $275.00. He requires a sign for his lawn as well as several small signs to put up around the community. These signs cost a total of $100.00. Instead of buying or leasing a car from a dealership, Daniel plans to buy a used car that is in good condition for $5 500.00. Calculate the start-up costs for Daniel's business.

Expense	Estimated Monthly Cost Including Tax
Total	

4. Daniel has saved $3 000.00 that he will put towards the start-up costs of his business that were calculated in *question 3*. The down payment will decrease the loan that he requires. The bank Daniel contacted gives him a loan at an annual rate of 5.3% if he makes monthly payments of 110.00.

(2)

    a. What is the amount of the loan that Daniel borrows from the bank, after the down payment is applied?

(2)

    b. Using the *Number of Monthly Payments Calculator,* determine the number of monthly payments Daniel will make to pay off the loan.

       Payment calculators are linked to the Assignment Submission Page in your Moodle course.

principal	
annual interest rate	
monthly payment	
number of monthly payments	

(1)

    c. How long will it take for Daniel to pay off the loan? Express the answer in years.

5.   Daniel pays $1 600.00 monthly for his mortgage and utilities. He estimates that he will use 10% of his living space for the business.

(2)   a.   Calculate the monthly cost of the mortgage payment and utilities required for the business.

(4)   b.   The monthly expenses that Daniel identified are

- loan payment of $110.00
- the cost of his mortgage and utilities for the business (calculated in *Part a*)
- the maintenance for the company vehicle is $250.00
- fuel for the company vehicle is $200.00
- registration for the vehicle is $7.00
- car insurance is $80.00
- business insurance is $20.00

Complete the table by identifying each monthly expense as a fixed cost or variable cost.

Daniel's Operational Expenses			
Monthly Fixed Costs		**Monthly Variable Costs**	
Total		Total	

(2)   c.   Calculate Daniel's monthly operating expenses.

(2) 6. Daniel's hourly rate will be $45.00. He estimates that he will initially work 25 hours per month and gradually increase his hours as his clientele increases. Calculate Daniel's projected sales revenue.

(2) 7. Calculate Daniel's projected monthly net income.

(2)   8.   Daniel's monthly living expenses are $3 000.00. Is he earning enough income from his business to quit his job and support himself? If not, suggest ways he can either reduce his expenses or increase his revenue.

Mathematics 30-3 Finance Formula Sheet

- total cost of a loan $=$ monthly payment $\times$ number of monthly payments

- total amount paid $=$ down payment $+$ total cost of loan

- interest $=$ total cost of loan $-$ inital cost of loan

- total cost of a lease $=$ monthly payment $\times$ number of monthly payments

- depreciation $=$ initial cost of vehicle $-$ present value of vehicle

- penalty $=$ cost/km $\times$ extra km driven

- cost $=$ fuel price $\times$ fuel consumption $\times$ distance

- total cost $=$ fixed costs $+$ variable costs

- net income $=$ revenue $-$ expenses

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