

**MTH-1101-3 Learning Situation**

## **The Little Cowpokes**

The Little Cowpokes Daycare Centre is a non-profit facility. They want to carry out some renovations on their property. They have to completely rebuild their roof, replace their sliding door, and put a new fence around their backyard. Their estimate for the total cost of these renovations is \$7,500.

So the folks who run the daycare centre have to decide which suppliers they want to do business with. **They need to buy and install a fence and a sliding door, and they must hire someone to rebuild their roof.**



**Facts section.**

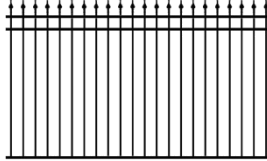
Usually consists of 5 to 6 short questions and sub-questions.

Worth **only** 20% of the final mark.

Question 1: Here are the cost estimates submitted by various suppliers. For each submission, perform the calculations. Show all your work.

- 1) Calculate the price minus the discount.
- 2) Calculate the price plus tax.
- 3) Calculate the total cost, including the installation fee.

**For the backyard fence:**



a) *Cool Fencing Inc.* Their price is \$1,130 plus tax, minus a 25% discount, plus a \$300 installation fee, tax included in the price.

b) *Love Fencing Ltd.* Their price is \$1,050, tax and installation included.

**For the sliding door:**



c) *Clear Windows Inc.* Their price is \$1,599, tax and installation included. *Clear Windows Inc.* offers a 15% discount.

1) Calculate the price, discount included.

2) Calculate total price with tax.

d) *Future Windows Ltd.* Their price is \$965 plus tax, and a \$400 installation fee, tax included.

1) Calculate the price of the door with tax.

2) Calculate the total price including installation fee.



To rebuild the roof:

e) *Modern Roofing Inc.* Their price is \$4,700 all included, and there is a 10% discount.

f) *Bargain Roofers Inc.* Their price is \$4,599, installation fee included. They will pay half the tax.

**Question 2:** Complete the following table. Make sure you make the right choices.

The best choice for the fence	The best choice for the sliding door	The best choice for the roof
Company Name	Company Name	Company Name
Total Cost	Total Cost	Total Cost
Total cost of all renovations:		



**Question 3:**      A day trip to the ZOO

The Little Cowpokes Daycare Centre is organizing a day trip to the zoo. Government regulations require that there must be 1 adult present for every 8 children. Given that 72 children have signed up for the day trip, and the zoo charges an entrance fee of \$4.75 per child and \$5.50 per adult:

- a) Calculate the number of adults that will accompany the children to the zoo. Use the fundamental law of proportions.**

- b) Calculate the total cost of the day trip, using the fundamental law of proportions.**

1) Calculate the total entrance fee for children, and for adults.  
2) Calculate the total cost.

c) For their day trip to the zoo, the day care centre has to rent a bus. Each bus contains two sets of double seats per row. Each bus has 11 rows of seats. **Calculate how many buses will be needed to transport the kids and their adult supervisors to and from the zoo. Use the fundamental law of proportions.**

- 1) Calculate the total number of seats in each bus.
- 2) Calculate the number of seats required.
- 3) Calculate the number of buses required.

## Skills Section

You're at the part where the situation is presented in greater detail.

The next two tasks you will be asked to complete are based on the following situation.

As you know, the Little Cowpokes Daycare Centre's estimate for their renovation project is \$7,500. This amount is to be paid in 4 monthly installments of \$1,875. Here is some important information concerning their budget:

The Little Cowpokes Daycare Centre receives an annual subsidy of \$1,500, and gets \$300 per year from sponsors. The centre's annual revenue totals \$125,000.

The centre pays \$1,500 rent per month, and pays \$375 per month for heating and electricity. The weekly salaries paid to 2 full-time employees total \$750. The centre has to pay \$2,025 per year for their insurance. It costs \$250 per week just to feed all those little mouths. The centre sets aside 15% of its revenues for contingencies (unforeseen events and emergencies).

**Task 1:** Given this annual budget, determine whether the Little Cowpokes Daycare Centre can afford their renovation project.

**Task 2:** Fill out the form itemizing the gross salary, deductions and net salary of a daycare centre employee.

Here's how you'll be evaluated:

**Interpretation (25%)** Did you understand the symbols and terms? Did you make the right choices?

**Production (25%)** Did you use the right symbols and the right terms? Was your message well structured?

**Realization (40%)** Did you choose and perform the operations correctly?

**Task 1:** For each expense, calculate a monthly amount, and write it out in arithmetic form.

Here's the 1<sup>st</sup> task.

You have to show all your steps and calculations.

Don't hesitate to create titles.

Ex: "Calculation of rent expense"



**Task 1:** Complete the following table.

Budget Items	Monthly Amount
Revenues	$\times 52 \div 12$
<b>Total revenues</b>	
<b>Expenses</b>	
<b>Total expenses (before calculating for contingencies)</b>	
<b>Supplementary amount for contingencies</b>	
<b>Total expenses</b>	
<b>Summary</b>	
<b>Total revenues</b>	
<b>Total expenses</b>	
<b>Surplus or deficit</b>	

Can the Little Cowpokes Daycare Centre afford to renovate?

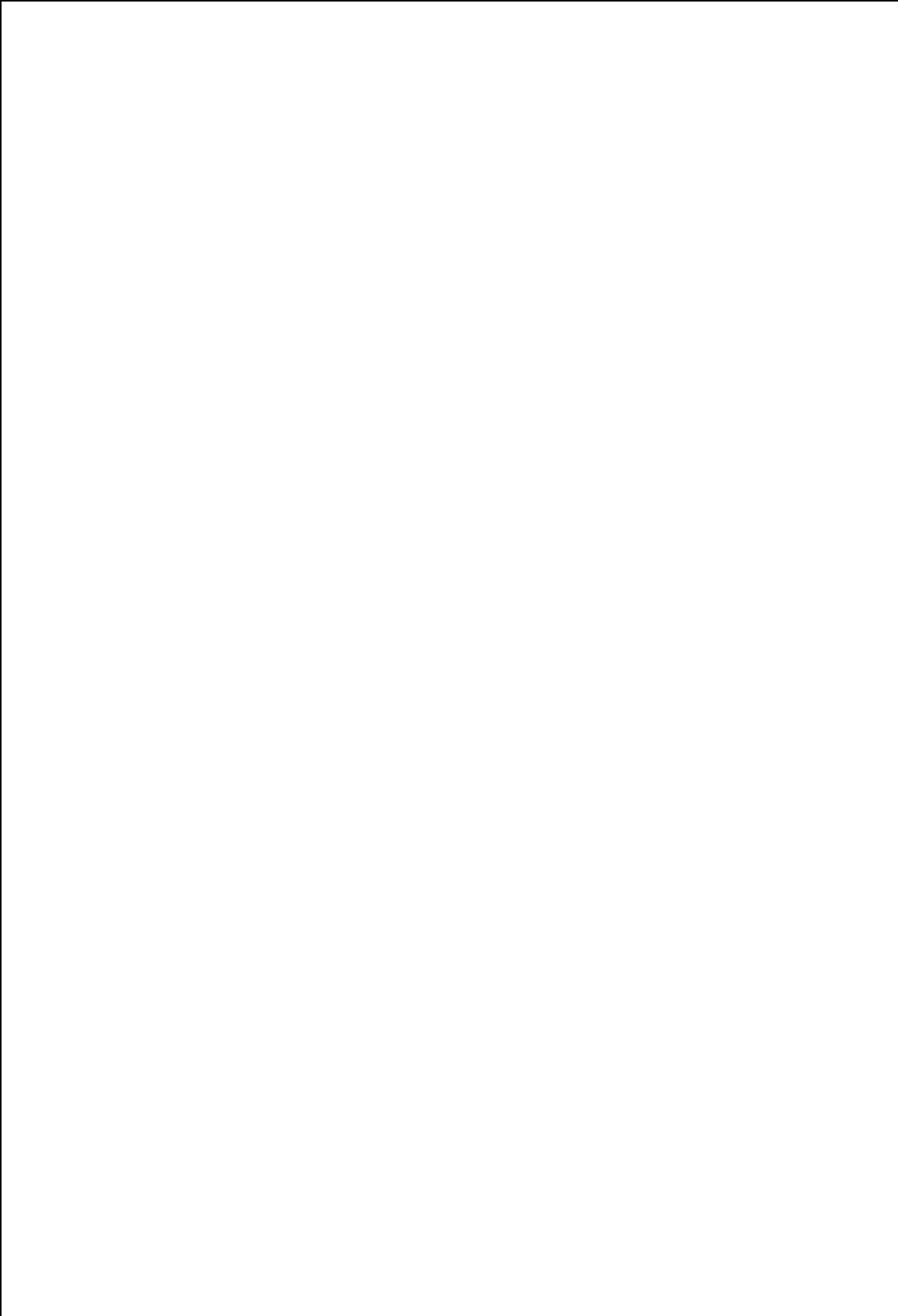
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**Task 2:** Fill out the form below. It itemizes the gross salary, deductions and net salary of a daycare centre employee.

**Here is what you need to know:**

- Françoise Babin is a daycare technician.
- On July 15<sup>th</sup> 2017 she received a paycheck for her work from July 5<sup>th</sup> to July 11<sup>th</sup>.
- You have to deduct the following from her gross salary:
  - 17% for federal income tax.
  - 16.2% for provincial income tax.
  - 0.5% for the Québec Parental Insurance Fund
  - 1.4% for unemployment insurance
  - 4.5% for the Québec Pension Fund
  - \$4 for health insurance
  - An 8.75% tax assessed on the health insurance payment only.

Show your work!



Identification	
Name of employee:	First name of employee:
Job description:	Name of employer:
Date of payment:	Work period: From:                      To:
Salary	
Hours paid at regular rate (hourly rate x number of hours)	\$
Hours paid at overtime rate (overtime rate x number of hours)	\$
Bonuses	\$
Gross Salary (salary + allowances)	\$
Deductions	
Federal tax	\$
Provincial tax	\$
Québec Pension Fund	\$
Unemployment Insurance	\$
Québec Parental Insurance Fund	\$
Group Insurance	
Health insurance	\$
Disability insurance (short and long term)	\$
Life insurance	\$
Taxes on insurance	\$
Charitable donations	\$
Other expenses	\$
Total deductions	\$
Net salary (gross - deductions)	\$

