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## MODULE 8.1 - APPLICATION: LOANS

## LEARNING OBJECTIVES

Note: Module 8.1 Guided Notes has 4 pages!

In this section, you will:

- Find the amount of a loan given the payments.
- Find the payments required given the loan amount.


## Demand Loans and Characteristics

- State the definition of a demand loan.
- State the characteristics of a demand loan.
- State the types of simple interest financing.


## Repayment Schedules

- State the definition of a repayment schedule.
- List the step of a repayment schedule.

How It Works

## MODULE 8.1 - CLASS NOTES

1. Woodgrain Industries took out an operating loan with RBC for $\$ 20,000$ at a fixed interest rate of $8 \%$ on September 14. The operating loan requires a monthly fixed payment of $\$ 800$ on the 14th of every month. Create the first three months of its repayment schedule.

| Date | Balance <br> before <br> Transaction | Annual <br> Interest <br> Rate | Number <br> of Days | Interest <br> Charged | Accrued <br> Interest | Payment <br> $(+)$ or <br> Advance <br> $(-)$ | Principal <br> Amount |
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| Balance after <br> Transaction |  |  |  |  |  |  |  |
| Sep 14 |  |  |  |  | $\$ 20,000$ |  |  |
| Oct 14 |  | $8 \%$ |  | $\$ 800$ |  |  |  |
| Nov 14 |  | $8 \%$ |  | $\$ 800$ |  |  |  |
| Dec 14 | $8 \%$ |  |  |  |  |  |  |

2. On July 15, when the prime rate was set at $4 \%$, Canadian Footwear took out an operating loan from CIBC for $\$ 8,000$ at prime plus $1.25 \%$. The terms of the loan require a fixed payment of $\$ 1,500$ on the 15 th of every month until the loan is repaid. The prime rate climbed by $0.5 \%$ on September 29. Create a repayment schedule for the loan and calculate the total interest paid.

| Date | Balance <br> before <br> Transaction <br> $(\mathrm{P})$ | Annual <br> Interest <br> Rate <br> $(\mathrm{r})$ | Number <br> of <br> Days <br> $(\mathrm{t})$ | Interest <br> Charged <br> $(\mathrm{I}=$ Prt) | Accured <br> Interest | Payment (+) <br> or <br> Advance (-) | Principle <br> Amount | Balance after <br> Transaction |
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3. Lynne has access to a HELOC that requires only the payment of accrued interest on the first of every month. On March 1, the opening balance on her HELOC was $\$ 15,000$. She took advances of $\$ 6,000$ and $\$ 10,000$ on March 21 and May 4, respectively. She made additional payments of $\$ 11,000$ and $\$ 15,000$ on April 15 and June 17. The interest rate on her HELOC sits at prime plus $2 \%$. On March 1, the prime rate was $3 \%$. On April 26, it rose by $0.5 \%$. Determine the total interest paid on her HELOC from March 1 to July 1.

| Date | Balance <br> before <br> Transaction <br> $(\mathrm{P})$ | Annual <br> Interest <br> Rate <br> $(\mathrm{r})$ | Number <br> of <br> Days <br> $(\mathrm{t})$ | Interest <br> Charged <br> $(\mathrm{I}=$ Prt $)$ | Accured <br> Interest | Payment (+) <br> or <br> Advance (-) | Principle <br> Amount | Balance after <br> Transaction |
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4. Rufaro has been a full-time student at the University of Manitoba for the past four years. She has just completed her bachelor of commerce degree from the Asper School of Business and her last day of exams was April 28. Her total student loan is $\$ 30,000$. She has decided to take her six-month grace period and convert it to principal, then start making payments of $\$ 400$ per month using the variable interest rate of prime $+2.5 \%$. The current prime rate is $4.25 \%$. On January 10 , she will make an additional payment of $\$ 250$ toward her loan. On August 27 and again on February 22, the prime rate rises by $0.5 \%$. Construct a repayment schedule displaying only the first six months of payments. Calculate the total interest on her student loan charged for the entire year (April 30 to April 30). Assume February has 28 days.

| Date | Balance <br> before <br> Transaction <br> $(\mathrm{P})$ | Annual <br> Interest <br> Rate <br> $(\mathrm{r})$ | Number <br> of <br> Days <br> $(\mathrm{t})$ | Interest <br> Charged <br> $(\mathrm{I}=$ Prt $)$ |
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| Date | Balance <br> before <br> Transaction <br> (P) | Annual <br> Interest <br> Rate <br> $(\mathrm{r})$ | Number <br> of <br> Days <br> $(\mathrm{t})$ | Interest <br> Charged <br> $(\mathrm{I}=$ Prt) | Accured <br> Interest | Payment (+) <br> or <br> Advance (-) | Principle <br> Amount | Balance after <br> Transaction |
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