

Grab a calculator & finish

Use the TVM-Solver for each of the following...

p. 538: #1 - 4

NOTE: Have screenshots ready if not done!

Cash Rebate - \$ given back at the end of fixed amount of time...can be used towards paying off a purchase

3. Annie and Peter live in Uluhaktok, on Victoria Island, Northwest Territories. They order most of their groceries from a supply company, which ships the groceries by barge in the summer. Annie and Peter's grocery order totals \$3678, and the shipping cost is \$785. They can afford to pay \$400 each month. Whose credit card should they use?
- Annie's credit card charges 15.5%, compounded daily. It has an annual fee of \$75, which is added to the balance at the beginning of the year.
 - Peter's credit card charges 18.7%, compounded daily.

TOTAL
4463

Annie

```

N=12.35360015
I%=15.5
PV=4538
PMT=-400
FV=0
P/Y=12
C/Y=365
PMT: [ ] [ ] BEGIN
    
```

```

12.35*400      4940
Ans-4538      402
    
```

Better

Pay Interest

Peter

```

N=12.36248209
I%=18.7
PV=4463
PMT=-400
FV=0
P/Y=12
C/Y=365
PMT: [ ] [ ] BEGIN
    
```

```

12.36*400      4944
Ans-4463      481
    
```

Pay Interest

2. Hannah goes to Blue Quills First Nations College in St. Paul, Alberta. She needs to fly home to Whitehorse, Yukon, next week for a wedding. The ticket costs \$2150.66, and she intends to use credit to pay for it. She can afford payments of \$200 monthly, and she has two credit cards she could use. Which credit card should she use? Explain.
- Card Blue charges 18.5%, compounded daily. At the end of each year, she gets a 3% cash rebate on all new purchases.
 - Card Red offers an interest rate of 16.25%, compounded daily.

Blue → Rebate

```
2150.66*0.03
      64.5198
■
```

```
■ N=11.85692118 ← months
  I%=18.5
  PV=2150.66
  PMT=-200
  FV=0
  P/Y=12
  C/Y=365
  PMT: [ ] [ ] BEGIN
```

```
11.86*200
Ans-2150.66 2372
Ans-64.52 221.34
■ 156.82 ← Pay Rebate on Interest
```

Better

Pay Interest
Pay Rebate on Interest

Red

```
■ N=11.70705961 ← months
  I%=16.25
  PV=2150.66
  PMT=-200
  FV=0
  P/Y=12
  C/Y=365
  PMT: [ ] [ ] BEGIN
```

```
11.71*200
Ans-2150.66 2342
Ans-191.34 ← Pay Interest
```

1. Mia is buying a used trailer for \$5000 on credit. She plans to travel through the Rockies over the summer. She can afford payments of \$200 each month and is considering these two options:

- A • The dealership credit card at 15.8%, compounded daily, and an immediate rebate of 2.4% off her first purchase
- B • A bank loan at 9.8%, compounded monthly
 - a) How much would Mia end up paying, in total, with each option?
 - b) How much interest would she pay for each option?
 - c) How long will it take her to pay off the balance for each option?
 - d) What should she use: the credit card or the bank loan? Why?

Rebate

Rebate Now

0.024 * 5000 = 120

Better

A
 a) $5000 - 120 = 4880$
 months

c) $N = 29.66902249$
 $I\% = 15.8$
 $PV = 4880$
 $PMT = -200$
 $FV = 0$
 $P/Y = 12$
 $C/Y = 365$
 $PMT: [] [] [] [] BEGIN$

$29.67 * 200$ a) 5934
 Ans - 4880 b) 1054

B
 5000

c) $N = 28.09132673$
 $I\% = 9.8$
 $PV = 5000$
 $PMT = -200$
 $FV = 0$
 $P/Y = 12$
 $C/Y = 365$
 $PMT: [] [] [] [] BEGIN$

$28.09 * 200$ a) 5618
 Ans - 5000 b) 618

9.3

Solving Problems Involving Credit

line of credit

A pre-approved loan that offers immediate access to funds, up to a pre-defined limit, with a minimum monthly payment based on accumulated interest; a **secure line of credit** has a lower interest rate because it is guaranteed against the client's assets, usually property.

Bank of Canada prime rate

A value set by Canada's central bank, which other financial institutions use to set their interest rates.

APPLY the Math p. 543

EXAMPLE 1 Solving a credit problem that involves overall cost and number of payments

Meryl and Kyle are buying furniture worth \$1075 on credit. They can make monthly payments of \$75 and have two credit options. Which option should they choose? Explain.



Option A: The furniture store credit card, which is offering a \$100 rebate off the purchase price and an interest rate of 18.7%, compounded daily

Option B: A new bank credit card, which has an interest rate of 15.4%, compounded daily, but no interest for the first year

A

```

N=14.65424521
I%=18.7
PV=975
PMT=-75
FV=0
P/Y=12
C/Y=365
PMT: [ ] [ ] [ ] BEGIN
14.65*75
Ans-975 1098.75
    
```

← months
 ← Pay
 ← Interest
TOTAL 1098.75

```

N=2.384473095
I%=15.4
PV=175
PMT=-75
FV=0
P/Y=12
C/Y=365
PMT: [ ] [ ] [ ] BEGIN
2.38*75
Ans-175 178.5
    
```

12 months
 + 900 Pay
 Interest

BEST
TOTAL:
1078.50

EXAMPLE 2
p. 544

Solving a credit problem that involves payment amount and overall cost

Ed wants to buy a car and needs to use credit to finance it. The cost, with taxes and shipping, is \$24 738. Ed wants to repay his loan in 4 years using monthly payments and has two credit options:

- His secured line of credit at 1.7%, compounded monthly, above the Bank of Canada rate, which is currently 0.5%
- The dealership's financing plan at 2.5%, compounded daily

**r = 2.2%*

a) Which option should he choose? Why?

Line of Credit

```
N=48
I%=2.2
PV=24738
PMT=-538.85602...
FV=0
P/Y=12
C/Y=12
PMT: [ ] [ ] BEGIN
```

```
48*538.86      25865.28
Ans-24738
1127.28
```

Financing

```
N=48
I%=2.5
PV=24738
PMT=-542.13675...
FV=0
P/Y=12
C/Y=365
PMT: [ ] [ ] BEGIN
```

```
542.14*48      26022.72
Ans-24738
1284.72
```

PMT

Pay Interest

BEST

PMT

Pay Interest

In Summary**Key Ideas**

- Forms of credit that can be used to make purchases or acquire cash include bank loans, lines of credit, credit cards, payday loans, and dealership or in-store financing.
- There are many factors that determine the best credit option, such as the interest charged, the total payment, the amount of each payment, and the length of time it takes to pay off the loan. All of these factors must be considered carefully before making a decision.

Need to Know

- Credit cards have a credit limit, which is the maximum amount you can borrow. The credit limit varies from person to person, based on credit history.
- Cash advances on credit cards have no period in which no interest is charged and sometimes have a greater interest rate than purchases.
- A line of credit has a lower interest rate than most loans and credit cards. Because of this, a line of credit can be useful for consolidating debt.
- As with a credit card, a line of credit allows for flexibility in how the loan is paid back, as long as the minimum payment is made. The minimum payment is often based on the accumulated interest each month.
- Credit that is offered in conjunction with a special offer or promotion must be considered *very* carefully. There may be conditions for how the loan is paid back, which may result in unexpected costs or penalties.
- Payday loans must also be considered carefully, since the fee for borrowing is often high.
- An amortization table is particularly useful when you need to know interim values and when payment amounts or interest rates vary throughout the term of a loan.

HOMEWORK...

p. 552

1, 2, 3, 4, 10