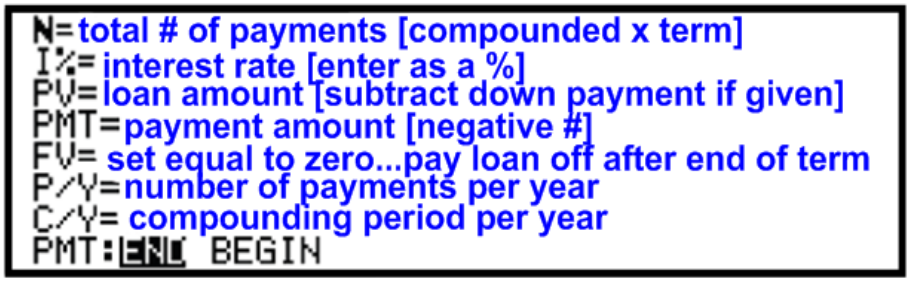
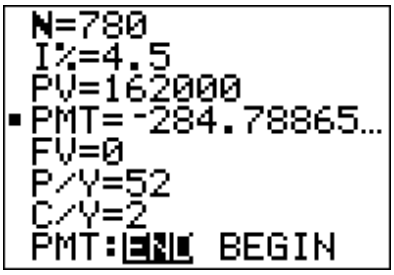
HOMEWORK...

p. 530: #4, #7-10, 13, 15, 16, 17



Question 7???

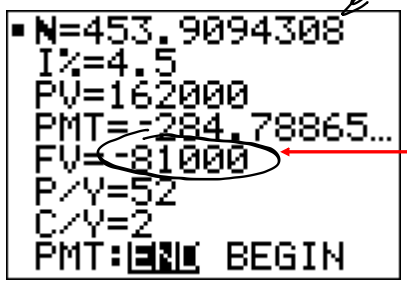
c)



Problem Solving 101…

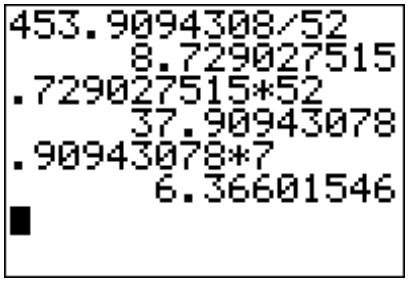
If you are not getting the correct answer - TRY to figure why in order to arrive at the correct answer!

d)



I forgot the negative…

$ out of my pocket!



8 years

37 weeks

6 days !!!

17. Connor is negotiating the purchase of a new car and has two options:

Option A: Borrow $21 000 at 1.8%, compounded monthly, with a term of 4 years, and pay off the loan by making regular monthly payments.

Option B: Pay $5000 at the time of purchase. Borrow $16 000 at 1.8%, compounded monthly, for a term of 3 years, and pay off the loan with regular monthly payments.

a) For each option, what is the regular monthly payment?

b) For each option, what is the total amount of interest?

c) What would you advise Connor to do? Justify your recommendation.

A

a)
```
N=48
I%=1.8
PV=21000
PMT=-453.76688…
FV=0
P/Y=12
C/Y=12
PMT:END BEGIN
```

B

```
N=36
I%=1.8
PV=16000
PMT=-456.88560…
FV=0
P/Y=12
C/Y=12
PMT:END BEGIN
```

b)
```
453.77*48
          21780.96
Ans-21000
            780.96
```

Pay Back

Interest

```
456.89*36
          16448.04
Ans-16000
            448.04
```

TOTAL

Best

```
16448.04+5000
          21448.04
```

9.2 Exploring Credit Card Use

GOAL PAGE 536

Compare credit options that are available to consumers.

EXPLORE the Math

Jayden saw the new sound system he wanted on sale for $2623.95, including taxes. He had to buy it on credit and had two options:

- Use his new bank credit card, which has an interest rate of 14.5%, compounded daily. (Because this credit card is new, he has no outstanding balance from the previous month.)
- Apply for the store credit card, which offers an immediate rebate of $100 on the price but has an interest rate of 19.3%, compounded daily.

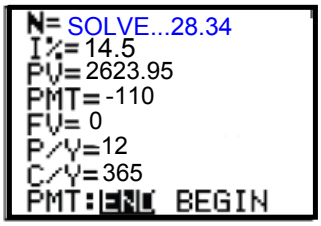
As with most credit cards, Jayden would not pay any interest if he paid off the balance before the due date on his first statement. However, Jayden cannot afford to do this. Both cards require a minimum monthly payment of 2.1% on the outstanding balance, but Jayden is confident that he can make regular monthly payments of $110.

Which credit card is the better option for Jayden, and why?

Solution is given below...

With TVM-Solver...

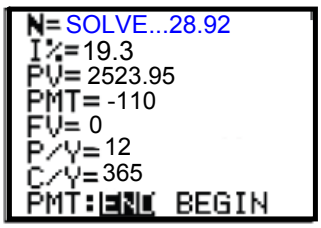
A)



He pays...

28.34 x 110 = $3117.40 **BETTER OPTION**

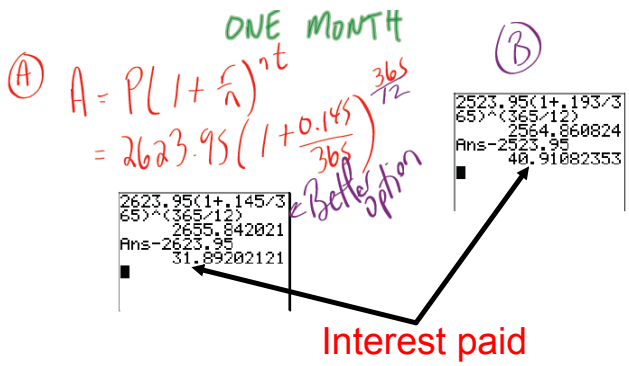
B)

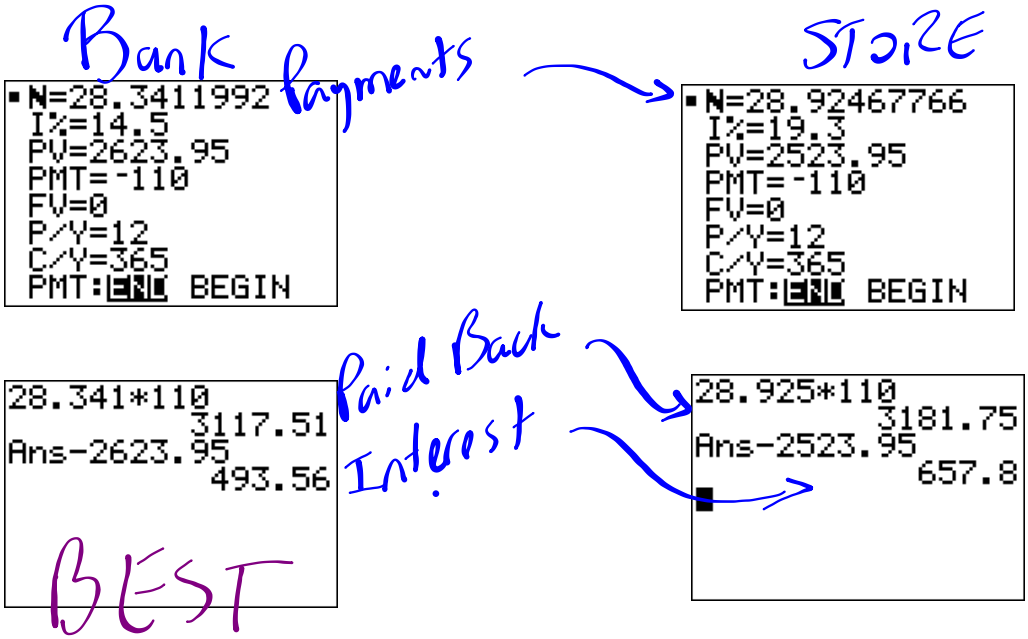


He pays...

28.92 x 110 = $3181.20

By hand...




Bank
payments
N=28.3411992
I%=14.5
PV=2623.95
PMT=-110
FV=0
P/Y=12
C/Y=365
PMT:END BEGIN
28.341*110
3117.51
Ans-2623.95
493.56
BEST
Paid Back
Interest
Store
N=28.92467766
I%=19.3
PV=2523.95
PMT=-110
FV=0
P/Y=12
C/Y=365
PMT:END BEGIN
28.925*110
3181.75
Ans-2523.95
657.8

Reflecting Do together & discuss...

A. Share your solution and the strategy you used to solve the problem with classmates. Was there more than one way to approach the problem? Are there advantages to using one strategy rather than another?

B. Jayden could make smaller payments each month or he could pay a different amount each month, as long as each payment is at least 2.1% of the outstanding balance. Why would he choose to make regular payments of $110 instead?

Use the TVM Solver for part (c)

C. With a partner, decide which credit card, his new bank card or the store card, would be the better option if the conditions were changed as described below. Provide your reasoning.
   i) The store credit card offers an immediate rebate of $200, instead of $100.
   ii) The store credit card offers an immediate rebate of $200, instead of $100, and has an interest rate of 20.3%, compounded daily.
   iii) The store credit card offers an immediate rebate of $200 and has an interest rate of 20.3%, compounded daily. Jayden's new bank credit card has an interest rate of 13.5%, instead of 14.5%, compounded daily.

D. In loan or credit situations, the interest charged is the cost of borrowing. In Jayden's situation, can you decide which credit card is better simply by comparing the interest charged? Explain.

Solutions...

A. Discuss amongst the class, any other comparisons that can be done?

B. Min Payment: 2.1 % of balance is $55.10. By paying more than the minimum, he will pay it off faster and pay less interest.

C. * Calculations done with TVM-Solver...
   i) Store Credit Card...pays $3022.80
   ii) Store Credit Card...pays $3065.70
   iii) Store Credit Card...still pays $3065.70

[Bank Credit Card would be paying back $3075.60]

D. Not right away since the one that has a higher interest rate also has a cash rebate [lowers the present value]. As well, some cards have incentives like Air Miles which may make the card more favourable. Annual fees must also be considered since this is added onto the yearly cost of the credit card.

In Summary PAGE 536

Key Ideas

- Incentives or promotions are sometimes offered to entice people to use credit cards. For example, an immediate cash rebate may be offered on the first purchase using a credit card. Low interest rates, rewards, or no annual fees may also be offered.
- The full cost of borrowing should be considered before making a decision about using a credit card. This includes the total interest charged, as well as the total payments and the time it will take to pay off the balance.

Need to Know

- Credit cards usually have a minimum amount that must be paid each month, based on a percent of the outstanding balance. If there is no outstanding balance from the previous month and the new balance is paid off in full by the payment due date, no interest is charged.
- If a credit card does not have an outstanding balance and it is used for a single purchase, it can be treated as a loan. The purchase price is the principal borrowed, and regular payments can be made until the balance is paid off.
- The cost of using credit is not just the amount of interest charged. There are incentives, such as cash rebates, that reduce the principal. This may end up costing more in interest but result in a lower total loan payment amount.

(5-10%)

Copy highlighted information into your notes titled 'Credit Cards'

HOMEWORK...

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