

2.2 – Exploring Credit Card Use

Important Information about Credit Cards:

- Credit Cards usually have a minimum amount that must be paid each month which is based on a percentage 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.
- Sometimes credit cards also have annual fees on top of charging interest (usually when there are special incentive programs, or a lower interest rate)
- Interest rates are often higher on any “Cash Advances” (using a credit card like a debit card to get cash from a machine rather than paying with your card at a store)

Example 1: Jayden saw the new sound system he wanted on sale for \$2623.95 (taxes included). He doesn’t have the money for the system and has to use credit. He has 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 19.8%, 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 payments of \$110

a) Which credit card is the better option for Jayden?

which one will pay off sound system quicker?

Bank:
 $N = ?$
 $I = 14.5$
 $PV = 2623.95$
 $PMT = -110$
 $FV = 0$
 $P/Y = 12$
 $C/Y = 365$
 $PMT: \text{END} \text{ BEGIN}$

*$N = 28.341$
 (29 months)*

Store:
 $N = ?$
 $I = 19.8$
 $PV = 2623.95 - 100 = 2523.95$
 $PMT = -110$
 $FV = 0$
 $P/Y = 12$
 $C/Y = 365$
 $PMT: \text{END} \text{ BEGIN}$

*$N = 29.139$
 (30 months)*

Bank Credit Card is better (even without saving \$100)

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?

- To pay off debt more quickly
- To pay less interest (less overall)

c) Assuming Jayden goes with the better option, how much interest is he paying?

$$\begin{aligned} & 29 \text{ months} \times 110 \text{ per month} \\ & = 3190 \\ & \text{He pays } \$3190 \text{ onto credit card} \\ & \text{but sound system cost } \$2623.95 \\ & \therefore \$566.05 \text{ interest} \end{aligned}$$

d) If Jayden had saved up the money with regular payments into a savings account that earns 4.7% interest compounded quarterly how long would it take to save up \$2623.95?

$$\begin{aligned} N &= ? & N &= 22.85296 \\ I &= 4.7 & & (23 \text{ months}) \\ PV &= 0 \\ PMT &= -110 \\ FV &= 2623.95 \\ P/Y &= 12 \\ C/Y &= 4 \\ PMT &: \text{END} \quad \text{BEGIN} \end{aligned}$$

e) How much money has Jayden actually put into the account?

$$23 \text{ months} \times \$110 = \$2530$$

Jayden is only spending \$2530

f) How much less money does he spend saving up for the sound system than if he had used a credit card?

$$\begin{aligned} & \text{Credit Card Cost} - \text{Saving Cost} \\ & 3190 - 2530 \\ & = 660 \end{aligned}$$

He will save \$660