

# Educating Your Students on the Power and Danger of Credit Cards

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**The Credit Card Act Quiz**

**Zachary Cachrane, a 28 year-old food scientist in Jackson, Tennessee, made \$62,000 last year. Zach began using credit cards when in college. One card from college carries a 24.6% annual percentage rate(APR) and the other card he opened after graduation carries a 19.4% APR due to his poor use of credit on the first card. He now has 11 credit card accounts open: five bank cards and six retail store cards. He uses them regularly presenting whatever card a store will honor.**

**He owes \$13,258.73 on the 24.6% card and \$4435.25 on the 19.6% card. His other three bank cards have APRs of 11.75%, 12.8% and 15.5%, and he owes \$532, \$613.38, and \$712.15 on the cards respectively. His six retail store cards have APRs in excess of 21% and he is committed to pay these off each month. Unfortunately, he is currently carrying a balance of \$325.67 on his JC Penny's card with a APR of 22.85% and a \$1268.19 on his Sears Card.**

**Zachary wished he had your class in high school or college and asks for some advice because he would like to improve his credit score before trying to buy his first house in a few years.**

**What would you recommend Zachary do to improve his use of credit cards?**

**Hint: Think about the number of credit cards and his spending habits.**

**Create a spreadsheet to help Zachary with:**

- **the APR,**
- **monthly periodic interest rate,**
- **minimum payment of 3%, (Currently most credit cards use 1 to 3%)**
- **how long it would take for him to pay off each credit card.**
- **the finance charge paid for each card**

### What do you Recommend - Answers

Card	Annual Percentage Rate	Monthly Periodic Rate	Balance	Minimum Payment of 3% or \$25		How long to pay it off using min payment amount			Finance Charge
				Balance* .03		FC = mo payment * # mo - balance			
<b>24.6% Card</b>	24.6000	2.0500	\$13258.73	\$397.76					
<b>19.4% Card</b>	19.4000	1.6167	\$4435.25	\$133.06					
<b>11.75% Card</b>	11.7500	0.9792	\$532.00	\$15.96	\$25.00				
<b>12.8% Card</b>	12.8000	1.0667	\$613.38	\$18.40	\$25.00				
<b>15.5% Card</b>	15.5000	1.2917	\$712.15	\$21.36	\$25.00				
<b>JC Penny</b>	22.8500	1.9042	\$235.67	\$7.07	\$25.00				
<b>Sears Card</b>	28.0000	2.3333	\$1268.19	\$38.05					
		<b>Total Debt Balance</b>	<b>\$22323.56</b>					<b>Total</b>	<b>\$0.00</b>

	APR	Monthly Periodic Rate	Balance	Minimum Payment of 3% or \$25	How long to pay it off using min payment amount	Total Finance Charge	
		Annual Rate / 12		Balance* .03	FC = mo payment * (# mo - 1) + last mo pay - balance		
<b>24.6% Card</b>	<b>24.6000</b>	<b>2.0500</b>	<b>\$13258.73</b>	<b>\$397.76</b>	<b>Total Finance Charge = 397.76 * 54 + 229.81 =</b>		<b>\$8450.12</b>
# Months	Present Value	Monthly Periodic Rate	Future Value		It took 55 months to pay off the credit care by paying 3% or \$397.76 a month without adding more purchases. The last payment was \$229.81		
1 to ?	13258.73-397.76	0.0205	PV - Mo Pay * ( 1 + interest Rate)				
	FV - mo pay						
1	12860.970	0.0205	13124.620				
2	12726.860	0.0205	12987.761				
54	225.199	0.0205	229.815				
55	-167.945						

## How long will it take to pay off the credit card if you pay 3% or \$25 of the existing balance

# Months	Present Value	Monthly Periodic Rate	Future Value	Accrued Interest	Finance Charge = Interest Paid
1 to ?	13258.73 - .03*13258.73	0.0205	PV - Mo Pay * ( 1 + interest Rate)		<b>It will take 327 months or 27 years and 3 months. The total interest paid or finance charge on this loan is \$24,958.04</b>
	FV - .03*FV				
1	12860.968	0.0205	13124.618	\$263.65	
2	12731	0.0205	12991.862	\$260.98	
87	5365	0.0205	5474.880	\$109.98	
273	810	0.0205	826.298	\$16.60	
326	18	0.0205	18.519	\$0.37	
327	-6		Total Accrued Interest	\$24958.04	



**The previous calculations do not break the monthly payment into interest and principal payments. Doing this will change the mathematics and allows us to talk about the significance of paying down the principal.**

**[Credit card minimum payment calculator](#)** taken on 4/26/2107 from Bankrate.com

# months	PV	Interest amount 68%	Principal amount 32%	Interest Rate	FV
		Payment * .68	Payment *.32		
1	\$13,258.73	270.4768	127.2832	0.0205	\$13,131.45
2	\$13,131.45	270.4768	127.2832	0.0205	\$13,004.16
3	\$13,004.16	270.4768	127.2832	0.0205	\$12,876.88
4	\$12,876.88	270.4768	127.2832	0.0205	\$12,749.60
104	\$148.56	270.4768	127.2832	0.0205	\$21.28
105	\$21.28	\$14.47	\$6.81	0.0205	\$14.47
<b>Total Interest Paid =</b>		<b>\$28,144.06</b>			

**It will take 105 months or 8 years and 9 months to pay it off by paying the current balanc the last month. You will pay a total of \$28.144.06 in interest.**

## Follow Up Questions:

- **Which method of paying of Zachary's credit card best demonstrates the “minimum payment trap?”**
- **What could Zachary do to reduce the amount of he pays as a finance charge?**
- **Could Zachary's credit card company begin to charge a default rate on his credit card balance?**
- **How would paying 5% of the original balance affect his time in paying off his credit card? How long would it take? Would he pay more or save money? How much?**
- **How could Zachary use balance transfers, introductory offers, or prioritize which cards to pay off first to reduce his overall cost?**



Thank you !!

Any questions,  
thoughts or  
feedback?

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## Credit Card Act Reference Source:

Prater, Connie (2016). 12 Consumer Protections in the Credit Card Act *Creditcards.com* Retrieved from

<http://www.creditcards.com/credit-card-news/help/card-act-12-consumer-protections-6000.php>