

Carrying credit card debt can be financially dangerous. What happens if you only make the minimum payment on a credit card? We will explore that with a series of spread sheets.

To start, let’s assume that Ann gets a new credit card, immediately uses it to charge her \$5000 tuition payment and then never uses it again, but only makes the minimum required payment. Ann will be charged a yearly annual interest rate of 18%, the credit card did come with a promotional offer that gives her a grace period for the first three months, so she is not charged interest for those first 3 months. Her payment will be 2% of her outstanding debt or \$10, whichever is greater.

1. Create a table to show Ann’s balance over time. Make the table as long as necessary to show when she will have paid off her debt. Note, that her minimum payment is 2% OR \$10, so you will need to locate in the table when her calculated payment falls below \$10, and hand enter the \$10 for the remainder of the table.

The first few rows of the table are shown so you can check your formulas:

	A	B	C	D	E	F	G	H
1	Initial Debt	\$ 5,000.00						
2	Yearly Rate	18%						
3	Monthly Rate	1.5%						
4	Payment Percentage	2%						
5	Minimum payment	\$ 10.00						
6								
		Month	Balance at Start of Month	Interest Charged at End of Month	Balance shown on Bill	Payment Made at End of Month	New Balance at End of Month	
7								
8		1	\$ 5,000.00	\$ -	\$ 5,000.00	\$ 100.00	\$ 4,900.00	
9		2	\$ 4,900.00	\$ -	\$ 4,900.00	\$ 98.00	\$ 4,802.00	
10		3	\$ 4,802.00	\$ -	\$ 4,802.00	\$ 96.04	\$ 4,705.96	
11		4	\$ 4,705.96	\$ 70.59	\$ 4,776.55	\$ 95.53	\$ 4,681.02	
12		5	\$ 4,681.02	\$ 70.22	\$ 4,751.23	\$ 95.02	\$ 4,656.21	
13		6	\$ 4,656.21	\$ 69.84	\$ 4,726.05	\$ 94.52	\$ 4,631.53	
14		7	\$ 4,631.53	\$ 69.47	\$ 4,701.00	\$ 94.02	\$ 4,606.98	
15		8	\$ 4,606.98	\$ 69.10	\$ 4,676.09	\$ 93.52	\$ 4,582.57	

2. Next, you are going to make a second version of your table. Click on the name tab of your first sheet and make a copy of the sheet. Go back and remove those \$10 payments you had to hand enter. (You can do this quickly by putting your fill-drag handle in cell F8 and double-clicking). The minimum payment is either 2% of the debt or \$10, whichever is greater. Now, use the MAX function to modify your formula in cell F8 to calculate the minimum payment. Once you have it, use your fill-drag handle and double click to complete the column. Your results should be the same as on your first sheet, but completed without the tedium of hand entering those \$10 payments.

3. Copy your table from step 2. Click on cell F12 and increase the number of decimal places being displayed. You can see that the payment calculation is not actually \$95.02, it is \$95.02467 (apprx.) Of course Ann cannot send in a payment in that amount so it has been rounded to \$95.02. But your table

is assuming that she did make a payment of (about) \$95.02467. So in this next version of your table, modify your formulas for both the interest calculations and the payment calculations to round those calculated values to two decimal places using the ROUND function. You should see a small change in the amount of Ann's final payment.

4. There is one final improvement to be made. Make a fourth copy of your table, and reformat the month column to a date format that displays month and year. Set the first row to the current month and year and fill down. How many years does it take Ann to pay off the debt? Try adjusting the values for the minimum payment and payment percentage rate. What values will allow Ann to pay off the debt in about ten years? (Answers will vary.)

1	Initial Debt	\$ 5,000.00					
2	Yearly Rate	18%					
3	Monthly Rate	1.5%					
4	Payment Percentage	2.0%					
5	Minimum payment	\$ 10.00					
6							
7		Month	Balance at Start of Month	Interest Charged at End of Month	Balance shown on Bill	Payment Made at End of Month	New Balance at End of Month
8		Sep-14	\$ 5,000.00	\$ -	\$ 5,000.00	\$ 100.00	\$ 4,900.00
9		Oct-14	\$ 4,900.00	\$ -	\$ 4,900.00	\$ 98.00	\$ 4,802.00
10		Nov-14	\$ 4,802.00	\$ -	\$ 4,802.00	\$ 96.04	\$ 4,705.96
11		Dec-14	\$ 4,705.96	\$ 70.59	\$ 4,776.55	\$ 95.53	\$ 4,681.02
12		Jan-15	\$ 4,681.02	\$ 70.22	\$ 4,751.24	\$ 95.02	\$ 4,656.22
13		Feb-15	\$ 4,656.22	\$ 69.84	\$ 4,726.06	\$ 94.52	\$ 4,631.54

Modify these values