Financial Mathematics: Homework #2

Ana Nora Evans

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Problem 2 Assume you charged $\$3,000$ on the first day of the credit card cycle and you don't pay the balance on time. How much will you pay in finance charges and interest next cycle?

Answer:

I will use the average daily balance method with an 14% APR and a 30-day cycle. Since the charge is made on the first day, the balance on each day of the cycle is $\$3,000$. Therefore, the average daily balance is $\$3,000$. The interest formula when using average daily balance is

$$I = ADB \times cycle\ length \times \frac{APR}{365}$$

Thus,

$$I = \$3,000 \times 30 \times \frac{0.14}{365}$$

For my credit card, a $39 finance charge would also be added to the interest.

Problem 3 Assume you charged $\$3,000$ on the last day of the credit card cycle and you don't pay the balance on time. How much will you pay in finance charges and interest next cycle?

Answer:

I will use the average daily balance method with an 14% APR and a 30-day cycle. Since the charge is made on the last day, then the balance on the first 29 days is zero and in the thirtieth day is $\$3,000$. Therefore the average daily balance is $\frac{\$3,000}{30} = \$100$. The interest formula when using average daily balance is

$$I = ADB \times cycle\ length \times \frac{APR}{365}$$

Thus,

$$I = \$100 \times 30 \times \frac{0.14}{365}$$

For my credit card, a $39 finance charge would also be added to the interest.