Consumer credit takes the form of loans extended to people who borrow money to finance the purchase of cars, furniture, appliances, jewelry, electronics, and other items.

I. Installment Loan (or Closed-End Credit)

Closed-end credit involves borrowing a set amount of money up front and paying a series of equal installments (payments) until the loan is paid off. Furniture and appliances may be financed through closed-end credit, sometimes called installment loans.

Installment loans set up under closed-end credit often are based on **add-on interest**. This means that if an amount ***P*** is borrowed, the annual interest rate is to be ***r***, and payments will extend over ***t*** years, then the required interest comes from **simple** interest.

EXAMPLE: Yasmin buys $4700 worth of furniture and appliances for her first apartment. She pays $940 down and agrees to pay the balance at 6% add-on interest for 2 years. Find:

a) the total amount to be repaid
b) the monthly payment
c) the total cost for the furniture and appliances plus interest

a) The total amount to be repaid is based off the amount of money borrowed, called the **amount to be financed (principal)**. You must consider the **down payment** first!

Purchase price – down payment = Amount borrowed or financed (Principal, or *P*) **[notecard!]**

$4700 - 940 = 3760 = P$

Amount to be repaid (future value) = $A = P(1 + rt)$ **[notecard!]**

$r = 6\% = .06$
$t = 2$

$A = 3760(1 + .06(2)) = \$4211.20 = A$

b) $\dfrac{\text{amount repaid (future value or } A)}{\text{total number of months } (12t)} = \text{monthly payment}$ **[notecard!]**

$\dfrac{4211.20}{12(2)} = \dfrac{4211.20}{24} = \$175.47$ (rounded)

c) Total cost plus interest (*C*) = Down payment + total amount repaid (future value, *A*)

$C = DP + A$ **[notecard!]**

$C = 940 + 4211.20 = \$5151.20$

EXAMPLE: The total purchase price of a new home entertainment system is $14,270. If the down payment is $2600 and the balance is to be financed over 36 months at 6% add-on interest, what is the monthly payment? (round to the nearest cent as needed)

- Purchase price – down payment = Amount borrowed or financed (Principal, or P) **[notecard!]**

$14270 - 2600 = 11670 = P$

- Amount repaid (future value) = $A = P(1 + rt)$ **[notecard!]**

$r = 6\% = .06$

$t = 36/12 = 3$ years

$A = 11670(1 + .06(3)) = \$13770.60$

- $\dfrac{\text{amount repaid (future value or } A)}{\text{total number of months } (12t)} = \text{monthly payment}$ **[notecard!]**

$\dfrac{13770.60}{36} = \boxed{\$382.52}$ rounded

II. Revolving Loan (or Open-End Credit)

With open-end credit, there is no fixed number of installments – the consumer continues paying until no balance is owed. Examples include department store charge accounts and charge cards such as MasterCard and VISA. With a typical open-end credit account, a credit limit is established initially and the consumer can make any purchases during a month (up to the credit limit).

At the end of each billing period (normally once a month), the customer receives an **itemized bill**, a statement listing purchases and cash advances, the total balance owed, the minimum payment required, and perhaps other account information.

Any charges beyond cash advances and prices of items purchased are called finance charges. Finance charges may include interest, annual fees, credit insurance, late fees, limit fees, and etc.

Most open-end lenders use a method of calculating finance charges called the average daily balance. It considers balances on all days of the billing period. This is a weighted average that multiplies the balance time the number of days.

$\text{Average daily balance} = \dfrac{\text{sum of daily balances}}{\text{days in billing period}}$ **[notecard!]**

EXAMPLE: The activity on a credit card account for one billing period is given below. If the previous balance (on March 3) was **$348.57**, and the bank charges **1.5%** per month on the average daily balance, then find

a) the average daily balance for the next billing period (April 3)
b) the finance charge for the April 3 billing.
c) the account balance for the billing date of April 3.

Running Balance
348.57

March 3	Balance	$348.57	
March 7	Payment	$65.00	348 − 65.00 = 283.57
March 13	Movies	$48.12	+ 283.57 = 331.69
March 18	Eat out	$23.58	+ 331.69 = 355.27
March 28	Bus pass	$64.00	+ 355.27 = 419.27
April 2	Order pizza	$28.35	+ 419.27 = 447.62

a) Make a table of the running balance
Then take the balance and multiply (times) the number of days of the balance:

Date	Running Balance	Number of Days	(Running Balance) · (Number of Days) = Daily Balances
March 3	348.57	4	348.57(4) = 1394.28
March 7	283.57	6	283.57(6) = 1701.42
March 13	331.69	5	331.69(5) = 1658.45
March 18	355.27	10	355.27(10) = 3552.70
March 28	419.27	5	419.27(5) = 2096.35
April 2	447.62	1	447.62(1) = 447.62
	Totals:	31	10850.82

Remember billing period is on April 3

$$\text{Average daily balance} = \frac{\text{sum of daily balances}}{\text{days in billing period}} = \frac{10850.82}{31} = \$\ 350.03$$

(round to the nearest cent)

Finance charge for April 3 bill will be 1.5% of average daily balance of $ 350.03 .

b) **Finance Charge** = 0.015(350.03) = $5.25
(round to the nearest cent)

c) ~~b)~~ Account balance on April 3 bill is latest running balance plus the finance charge.

Account Balance at time of bill on April 3 = 447.62 + 5.25
(round to the nearest cent)

= $452.87

EXAMPLE: At the beginning of a 31-day billing period, Sandra has an unpaid balance of $740 on her credit card. Three days before the end of the billing period, she pays $200. Find her finance charge at 3.5% per month using the average daily balance method.
(Assume no purchases or returns are made in the billing period.)

- Three days before the end of the billing period, Sandra pays $200 $740-200=540$

Date	Running Balance	Number of Days	(Running Balance) · (Number of Days) = Daily Balances
Beginning of 31-day billing period	740	28	$740(28) = 20,720$
Three days before the end of the billing period	540	3	$540(3) = 1620$
	Totals:	31	22,340

$$\text{Average daily balance} = \frac{\text{sum of daily balances}}{\text{days in billing period}} = \frac{22,340}{31} = \$\ 720.65$$

Sandra will pay 3.5 % finance charge based on the average daily balance of $\$ 720.65$

Finance Charge = $0.035(720.65) = \$25.22$
(round to the nearest cent)

NOTE: For the test, make sure you know how many days are in each month!

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
31	28	31	30	31	30	31	31	30	31	30	31