

Consumer Math
Notes 8.1 (Maturity Value / Short Term Loans)

Name _____
Date _____ Hour _____

_____ - a loan you repay with one payment after a specified period of time

_____ - the amount you must repay, includes principal and any interest you incur

_____ - is the amount of time the loan has been granted

- Can be in days, months, or years
- If the term is a certain number of days interest can be computed two ways:

_____ - based on 360-day year

_____ - based on 365-day year

_____	=	_____	X	_____	X	_____
_____	=	_____	X	_____	X	_____
_____	=	_____	+	_____		

Ex1: Lucy's bank granted her a single-payment loan of \$5000 for 100 days at a rate of 18%.

- What is the maturity value of the loan if her bank charges ordinary interest?

- What is the maturity value of the loan if her bank charges exact interest?

Ex2: Joseph's bank granted him a single-payment loan of \$2400 for 144 days at a rate of 18%.

a. What is the maturity value of the loan if his bank charges ordinary interest?

b. What is the maturity value of the loan if his bank charges exact interest?

_____ - loans that are offered for a period of 30, 60, or 90 days where interest is deducted in advance from the amount given to the borrower.

- Interest is based on a 365-day year
- _____ - the amount actually given to the borrower

_____	=	_____	X	_____	X	_____
_____	=	_____	-	_____		

Ex3: Violet received a 60-day short-term loan from the bank for \$17,000. The interest on this loan is 12.8% per year and is deducted from the face value of the loan. What are the proceeds due on this loan?

Ex4: Peter's request for a short-term loan in the amount of \$2500 was approved by the bank. The proceeds for the loan, \$2429.62 must be paid back in 90 days. What is the interest rate on this loan?

_____ - loan that you repay with several equal payments over a specified period of time

- Requires a _____ - the cash portion of the price at the time of purchase
- _____ - the amount you owe after making the down payment

_____ - type of an installment loan where you pay a finance charge for the use of the money you borrow

- Loan is repaid in equal monthly installments which is used to pay the interest
- Remaining portion is used to reduce your balance
- Amount of each monthly payment depends on the amount financed, the number of payments, and the _____ - an index showing the relative cost of borrowing money

_____	=	_____	X	_____
_____	=	_____	-	_____
_____	=	_____	X	_____
_____	=	_____	X	_____
_____	=	_____	-	_____

Ex1: James wants to purchase a car. The estimated cost of the car is \$23,900. He will pay 20% of the car up front and finance the rest at 15% interest for 48 months.

- c. What is the down payment?

- d. What is the amount financed?

- e. What is the monthly payment?

- f. What is the finance charge?

Ex2: Mark would like an installment loan for \$7800. His bank will loan him the money at 15 percent for 30 month installments. His insurance company will loan him the money at 18 percent for 24 months. Which loan will cost him less?

MONTHLY PAYMENT ON A \$100 LOAN				
Term in Months	Annual Percentage Rate			
	10%	12%	15%	18%
6	\$17.16	\$17.25	\$17.40	\$17.55
12	8.79	8.88	9.03	9.17
18	6.01	6.10	6.24	6.38
24	4.61	4.71	4.85	4.99
30	3.78	3.87	4.02	4.16
36	3.23	3.32	3.47	3.62
42	2.83	2.93	3.07	3.23
48	2.54	2.63	2.78	2.94

Consumer Math
Notes 8.4-8.5 (Allocation / Paying Off Early)

Name _____

Date _____ Hour _____

_____ - shows the distribution of interest and principal over the life of the loan

- With a simple interest installment loan, the amount of principal you owe decreases with each monthly payment
- When you pay a simple interest installment loan before the end of the term, you make a _____ - the previous month's balance and the current month's interest

_____	=	_____	X	_____	X	_____
_____	=	_____	-	_____		
_____	=	_____	-	_____		
_____	=	_____	+	_____		
_____	=	_____	-	_____		
		(_____	+	_____)

Ex1: Lucy received an installment loan for \$1329 to purchase a new computer. The annual percentage rate is 7.5 percent and the monthly payment is \$116.82.

- g. What is the interest?

- h. What is the payment to principal?

- i. What is the new principal?

Ex2: Carlos obtained a home improvement loan of \$6000 at 8% for 36 months. The monthly payment is \$187.70. The balance of the loan after 20 payments is \$2849.08. What is the interest for the first payment? What is the interest for the 21st payment? Why is the interest so much different for the 2 payments?

Ex3: The first 4 months of the repayment schedule for Doug and Donna's loan of \$1800 at 12% for 6 months is shown.

Repayment Schedule for an \$1800 Loan at 12% for 6 months				
Payment Number	Monthly Payment	Amount for Interest	Amount for Principal	Balance
				1800.00
1	310.50	18.00	292.50	1507.50
2	310.50	15.08	295.42	1212.08
3	310.50	12.12	298.38	913.70
4	310.50	9.14	301.36	612.34

a. What is the final payment if they pay the loan off with the fourth payment?

b. How much would they save by paying the loan off early?

Consumer Math
Notes 8.6 (Determining the APR)

Name _____

Date _____ Hour _____

If you know the number of monthly payments and the finance charge per \$100 of the amount financed, you can use a table to determine the APR of a loan

- Knowing the APR allows you to compare the relative cost of borrowing money

_____ = _____ - _____

_____ = _____ X _____

		ANNUAL PERCENTAGE RATES									
APR	10.00%	10.25%	10.50%	10.75%	11.00%	11.25%	11.50%	11.75%	12.00%	12.25%	12.50%
Term	Finance Charge per \$100 of Amount Financed										
6	\$ 2.94	\$ 3.01	\$ 3.08	\$ 3.16	\$ 3.23	\$ 3.31	\$ 3.38	\$ 3.45	\$ 3.53	\$ 3.60	\$ 3.68
12	5.50	5.64	5.78	5.92	6.06	6.20	6.34	6.48	6.62	6.76	6.90
18	8.10	8.31	8.52	8.73	8.93	9.14	9.35	9.56	9.77	9.98	10.19
24	10.75	11.02	11.30	11.58	11.86	12.14	12.42	12.70	12.98	13.26	13.54

Ex1: Paul obtained an installment loan of \$1500.00 to pay for a computer. The finance charge is \$146.25. He agreed to repay the loan in 18 monthly payments. What is the annual percentage rate?

Ex2: A 54-inch HDTV is for sale for \$1996.22 cash or \$177.83 per month for 12 months. What is the APR?