8.1: Single-Payment Loans

Objective: SWBAT compute the maturity value and interest rate of a single-payment loan.

A **single-payment loan** is a loan that you repay with one payment after a specified period of time. A **promissory note** is a type of single-payment loan. It is a written promise to pay a certain sum of money on a certain date in the future. The **maturity value** of the loan is the total amount you must repay. It includes both the principal and the interest owed. Remember that principal is the amount borrowed.

You'll need to know the **term** of the loan. This is the amount of time for which the loan is granted. For example, a single-payment loan may be granted for a number of years, months, or days. When the term is a certain number of days, the lending agency may calculate interest in one of two ways: **ordinary interest** (calculated by basing the time of the loan on a 360-day year) or **exact interest** (calculated by basing the time of the loan on a 365-day year.

In order to solve the problems in this section, make sure that you keep the following formulas in mind.

Important Questions	What formulas do I use?
How do I calculate **interest**?	Interest = Principal X Rate X Time
What do I need to find? **Ordinary interest** or **exact interest?**	Ordinary Interest = Principal X Rate X Time / 360 Exact Interest = Principal X Rate X Time / 365
How do I calculate **maturity value?**	Maturity Value = Principal + Interest Owed

Warm Up:

If you are getting a loan from a family member or friend, what are some differences in comparison to getting a loan from a bank or credit union?

Example 1:

Anita Sloane's bank granted her a single-payment loan of $7,200 for 91 days at 12 percent ordinary interest. What is the maturity value of the loan?

Step 1: Find the ordinary interest owed.

Principal × Rate × Time

$7,200.00 × 12% × 91/360 **= $218.40 ← Interest Owed**

Step 2: Find the maturity value.

Principal + Interest Owed

$7,200.00 + $218.40 **= $7,418.40 ← Maturity Value**

Example 2:

Anita Sloane's bank granted her a single-payment loan of $7,200 for 91 days at 12 percent exact interest. What is the maturity value of the loan?

Step 1: Find the ordinary interest owed.

Principal × Rate × Time

$7,200 × 12% × 91/365 = $215.408 or **$215.41 ← Interest Owed**

Step 2: Find the maturity value.

Principal + Interest Owed

$7,200.00 + $215.41 **= $7,415.41 ← Maturity Value**

Self Check Answers:

1. $15
2. $615
5. $14.79
6. $614.79