

MA 110 SECTION 3.1 SIMPLE INTEREST HOMEWORK: 1,3, 9, 17, 25, 33, 35, 37, 39, 41, 43, 45

Simple interest is computed by the following formula: $I = Prt$,

P = principle (amount borrowed)

r = annual interest rate (decimal form)

t = time in years

The interest on \$100 loan at 15% simple interest for

$$3 \text{ months} = 100(.15)(3/12) = 100(.15)(.25) = \$3.75$$

$$6 \text{ months} = 100(.15)(6/12) = 100(.15)(.5) = \$7.50$$

$$9 \text{ months} = 100(.15)(9/12) = 100(.15)(.75) = \$11.25$$

$$1 \text{ year} = 100(.15)(1) = \$15.00$$

The amount due on a simple interest loan is given by the following formula:

$$A = P + I = P + Prt = P(1 + rt) \rightarrow A = P(1 + rt)$$

The amount due on a \$100 loan at 15% simple interest loan.

$$\text{If the loan was for 3 months } A = 100(1 + .15(.25)) = \$103.75$$

$$\text{If the loan was for 6 months } A = 100(1 + .15(.5)) = \$107.50$$

$$\text{If the loan was for 9 months } A = 100(1 + .15(.75)) = \$111.25$$

$$\text{If the loan was for 12 months } A = 100(1 + .15(1)) = \$115.00$$

EXAMPLES:

1. A department store charges 18% annual rate for overdue accounts. How much interest will be owed on an \$835 account that is 2 months overdue.

2. A loan of \$10,000 was repaid at the end of 6 months. What amount was repaid (Principle + Interest), if a 6.5% annual interest was charged?

3. If you paid \$120 to a loan company for the use of \$2,000 for 90 days, what annual rate of interest did they charge?