Math 155 - Day #6: Simple Interest

When a loan is taken out, the amount borrowed is usually paid back plus an additional amount called the interest.

There are many ways of computing interest.

Typically, the amount of interest is a percentage of the loan.

The larger the loan, the more interest is paid.

The amount of interest also depends on the length of the loan.

The longer the loan, the more interest is paid.

One method of computing interest is called Simple Interest.

To calculate Simple Interest, we compute:

$$I = P \times r \times t$$

Where we define the variables

$I =$ interest $\qquad P =$ Principle

$r =$ annual interest rate $\qquad t =$ years of the loan.

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$I =$ interest $\qquad$ $P =$ Principle

$r =$ annual interest rate $\qquad$ $t =$ years of the loan.

Example: Find the amount of interest owed on a \$2000 loan with an annual interest rate $r = 8\%$ taken out for 3 years.

$I = 2000 \times .08 \times 3 = 480$

So, the amount of interest on the loan is \$480

Remember, this is just the interest portion of the loan.

The total amount to be repaid is
$Principle + Interest = 2000 + 480 = 2480$

Example: How much needs to be repaid on loan of \$1200 with an annual interest rate of 6.25% taken out for 2 years?

$I = 1200 \times .0625 \times 2 = 150$

\$150 is owed in interest.

The total amount to be repaid is: $1200 + 150 = 1350$

The amount to be repaid is \$1350

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$$I = P \times r \times t$$

$I =$ interest $\qquad$ $P =$ Principle

$r =$ annual interest rate $\qquad$ $t =$ years of the loan.

Example: Find the amount of interest owed on a \$4000 loan with an annual interest rate $r = 3.5\%$ taken out for 6 years.

$I = 4000 \times .035 \times 6$

$I = 840$

The amount of interest earned is \$840.

How much needs to be repaid on loan of \$1500 with an annual interest rate of 7% taken out for 3 years?

$I = 1500 \times .07 \times 3 = 315$

\$315 is owed in interest.

The total amount to be repaid is: $1500 + 315 = 1815$

The amount to be repaid is \$1815