

Simple Interest Formula

Although most financial situations involve compound interest, simple interest is still used in many short term (less than one year) financial situations.

$$P = \frac{I}{RT}$$

$$T = \frac{I}{PR}$$

Let's examine the simple interest formula $I = PRT$.

where

Principal refers to the amount of money borrowed or invested.

Rate refers to the annual interest rate (as a decimal number).

Time refers to the length of time the money is borrowed or invested, based on a period of years. If months or days are given, they must be converted to a fraction (or a piece) of a year.

$$R = \frac{I}{PT}$$

Example 3

- a) Calculate the amount of simple interest earned on an investment of \$850 at 4.75% for 1 year.

$$\begin{aligned} \text{Interest} &= \text{Principal} \times \text{Rate} \times \text{Time} \\ &= 850 \times 0.0475 \times 1 \\ &= \$40.38 \end{aligned}$$

NOTE: change 4.75% to decimal

$$\frac{4.75}{100} = 0.0475$$

- b) Calculate the amount of simple interest earned on an investment of \$550 at 6.5% for 3 months.

$$\begin{aligned} I &= PRT \\ &= 550 \times 0.065 \times \left(\frac{3}{12}\right) \\ &= \$8.94 \end{aligned}$$

$\left(\frac{3}{12}\right)$ year

- c) Mira earned \$250 in a simple interest savings bond. She invested the principal at 7% for 6 months. Determine the amount of principal that she originally invested.

$$I = 250$$

$$P = \frac{I}{RT} \Rightarrow \frac{250}{(0.07) \times \left(\frac{1}{2}\right)}$$

$$I = 250$$

$$R = 0.07$$

$$T = \frac{6}{12} = \frac{1}{2}$$

$$\text{Principal} = \$7142.86$$

- d) Gabriel invested \$975 in a simple interest account at 6.25%. He earned \$25 in interest. How long did he have the money invested? Answer in number of days, to the closest day.

$$\begin{aligned} \text{Time (years)} &= \frac{I}{PR} \\ &= \frac{25}{975 \times 0.0625} \end{aligned}$$

$$P = \$975$$

$$R = 0.0625$$

$$I = \$25$$

$$\text{Time} = 0.41 \text{ years}$$

$$\text{Time in days} = 0.41 \times 365 \Rightarrow 150 \text{ days}$$