

Simple Interest

Simple Interest is one of three types of interest you will learn in Algebra 1, the other two being compounded interest and continuously compounded interest. Each type has a formula that you use for all types of these problems.

The formula for simple interest is:

$$i = prt$$

i = The interest earned

p = The principal (STARTING amount)

r = The interest rate (as a DECIMAL)

t = Time in YEARS

The key to doing simple interest problems are to find the values of the 3 variables that you are given in the problem and then plug them into the formula above to find the missing variable.

Let's practice with a couple of examples!

James has \$40 in a savings account that earns 5% per year. How much will he have in interest in 3 years if the interest is not compounded?

Since we are trying to find interest (i), write what p, r and t are from the question. Then, plug it into the formula $i = prt$ to solve for i.

$$p = \$40 \quad r = 0.05 \quad t = 3$$

$$i = prt$$

$$i = (\$40) (0.05) (3)$$

$$i = \$6$$

If the question asks how much money does James has IN TOTAL, add the interest (\$6) to the original starting amount (\$40) to get \$46.

If Michael earns \$10 in interest in a savings account that earns 10% per year for 3 years, what is the original amount of money he put in the account?

$$i = \$10 \quad r = 0.1 \quad t = 3$$

$$\$10 = p (0.1) (3)$$

$$\frac{\$10}{0.3} = \frac{0.3p}{0.3}$$

$$p = \$33.33$$

Tips for Solving Problems:

1. For simple interest, always remember the formula $i = prt$! It will help you solve any problem that involves simple interest.
2. Pay attention to the wording of the question! It is essential to know what variables you are given values for in the question and the variable you need to solve for. Look for the wording used in this lesson for variables to ensure you are solving for the correct variable.
3. Make sure you convert the percentage given to you for interest is converted to a decimal (divide the percentage by 100) and make sure the variable t is in YEARS. If it is in months, you need to convert it to years.