

Percent

Percent is a combination of two root words, "per" and "cent". "Cent" is french for one hundred, so percent means "per one hundred".

The symbol for percent is the % sign, which looks like a rearranged 100.

Fifty percent can be written as 50% or as $\frac{50}{100}$

Warm Up

Convert the following percents to fractions and then to decimal format:

- (a) 45% (b) 68% (c) 5% (d) 1.2% (e) 350%

To solve percent problems, one method is to translate the sentence into an equation:

"60% of 200 is" can be setup as follows.

$$\frac{60}{100} \times 200 =$$

or

$$0.60 \times 200 =$$

where the 60% can be expressed as a fraction or decimal value, "of" is the operation of multiplying, and "is" represents the "equal" sign

Solve the following

75% of 160 is?

Ratio Approach Word Equation

$$\frac{n}{160} = \frac{75}{100}$$

$$\frac{75}{100} \times 160 =$$

or

$$0.75 \times 160 =$$

What percent is 7 out of 10?

$$\frac{?}{100} = \frac{7}{10}$$

Match the words to the equation.

What percent of a year is 4 months?

What percent of a day is 30 minutes?

What percent of a year is 6 weeks?

15 minutes to practice

page 450 - 452 #1, 2, 3, 5, 6, 7, 8 (a, c) for all

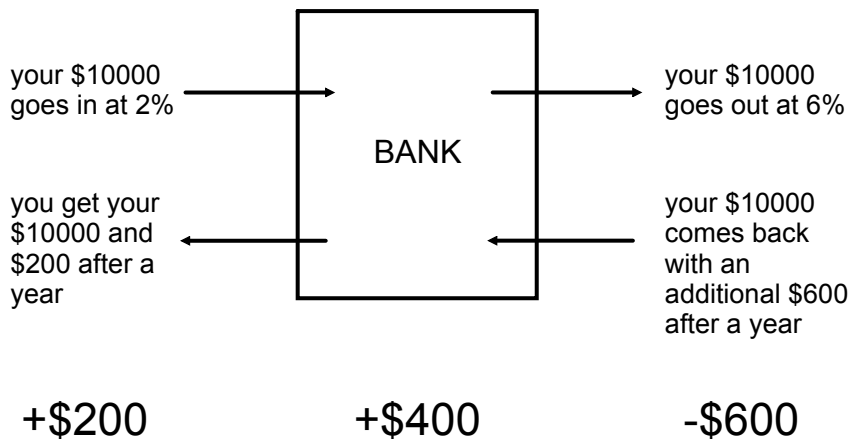
Interest on an investment or a loan is essentially a **fee** for using that money.

If you are investing YOUR money in a GIC, stock, bank account, etc., you collect interest, or charge the bank a fee to use your money.

If you take out a loan or mortgage, you are using the BANK'S MONEY, and you pay a fee to use it.

Example:

A bank will typically pay you around 1-2% for money that is left in your bank account. The bank then takes that money and loans it out at 4-8% to other people.



Simple Interest calculations:

A 5% rate of return on an investment means you receive/pay 5% of the original capital/investment.

A \$1,000 investment at 5% will generate \$50.00 in interest money.

$\$1,000 \times 0.05 =$ (for one year)

$$I = P r t$$

P - principal amount invested

r - annual rate of return

t - time in years (usually)

Example

A \$2,000 investment at 12% simple interest for 3 years will generate how much in interest?

Example

A \$10,000 investment at 6% simple interest for 5 years will generate how much in interest?

What would be the total amount received back at the end of the investment period?

Total Amount = initial principal + interest earned

$$A = P + I$$

or

$$A = P + Prt$$

or

$$A = P (1 + rt)$$

$$I = Prt$$

P - principal amount invested

r - annual rate of return

t - time in years (usually)

Simple Interest VS Compound Interest

The main difference between Simple interest and compound interest is that the monies generated (interest) by the principal investment are either removed at the end of each period OR are left in place to add to the original principal.

Simple Interest

\$1000.00 @ 8% for 3 years

Year	Principal	Interest	Amount
1	\$1000.00	\$80.00	\$1080.00
2	\$1000.00	\$80.00	\$1080.00
3	\$1000.00	\$80.00	\$1080.00

Total Interest Generated = \$240.00

Total Amount = \$1000.00 + \$240.00
= \$1,240.00

Compound Interest

\$1000.00 @ 8% for 3 years

Year	Principal	Interest	Amount
1	\$1000.00	\$80.00	\$1080.00
2	\$1080.00	\$86.40	\$1166.40
3	\$1166.40	\$93.31	\$1257.71

Total Interest Generated = \$257.31

Total Amount = \$1000.00 + \$257.31
= \$1,257.31

There is a difference of \$17.31 between the two types of interest.

Example

Sam had a credit card balance of \$550.00 that was 31 days overdue.
The annual interest rate on the card is 29.8%.

How much interest did Sam have to pay?

What is the new total that Sam owes?

Homework

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