

1 Simple Interest

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Math 11/12: Financial Literacy

Day 1: Simple Interest

First things first: Calculating Percent!

Divide by 100
(move decimal 2 places to LEFT) %

Write each percentage as a decimal number.

1. 15% 0.15
2. 110% 1.10
3. $12\frac{1}{2}\%$ $12.5\% = 0.125$
4. 5% 0.05
5. 1.8% 0.018

INTEREST

If you **deposit** money into a **bank account**, you are effectively lending money to a bank. In exchange, the bank pays you **INTEREST** for allowing them to keep your money.

Two types of interest are: Simple and Compound

SIMPLE INTEREST

- usually applicable in **short term** investments of **less than one year**
- used when annual interest is paid to investor and not reinvested

FORMULA:

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

\uparrow Interest \uparrow principal \uparrow annual interest rate \uparrow time (in years)
 (as a decimal)

$$FV = P + I$$

\uparrow Future Value

Time

1 year =

12 months
52 weeks
365 days



Example 1: You borrow **\$500** for **1 year** at **5% interest** rate to buy a **new** phone. What is the interest owed?

The principal is 500

The rate is 5% = 0.05

The time in years is 1 year

$$I = Prt$$

$$= (500)(0.05)(1)$$

$$I = \$25$$

The interest owed is \$25.

$$\text{Future value: } P + I = 500 + 25 = \boxed{\$525}$$

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Example 2: Marcus saved money from working a summer job at the PNE. He invests \$1,200.00 at 8% per year for 6 months. Calculate the simple interest earned and then find the amount of the investment at the end of the 6 months.

The principal is 1200
 The rate is $8\% = 0.08$
 The time in years is $\frac{6}{12} = 0.5$ years
 The interest earned is \$48



The total investment at the end of 6 months is \$1248
 (FV)

★ only do rounding at end!

Example 3: You invested \$500, which earned \$135 in 3 years. What was the interest rate?

$I = 135$
 $P = 500$
 $r = ?$
 $t = 3$ years

$$I = Prt$$

$$135 = 500 r (3)$$

$$135 = \frac{1500 r}{1500}$$

$$r = 0.09 \text{ multiply by } 100$$

$$\text{to get } \% \Rightarrow 0.09 \times 100 = \boxed{9\%}$$

Example 4: What is the interest owned on a loan of \$100 at 10% for 3 months?

$I = ?$
 $P = 100$
 $r = 10\% = 0.1$
 $t = \frac{3}{12} = \frac{1}{4} = 0.25$ years

$$I = Prt$$

$$= 100(0.1)(0.25)$$

$$= \$2.50$$

↑ you owe

Bonds:
 # 1, 3, 4

Do Not Print:

Example 2: Jennifer invested \$3,500 for 4 months and earned \$52.50 in interest. What was the annual rate of interest?

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