A1

Int 1 | **Notes 8-7** | **Unit 8**

Simple Interest and Original Price

Vocabulary

Simple Interest: $ added to an account that is based on how much $ it starts ~~out~~ with

Principal: the starting amount

Interest Rate: % of $ that will be added to the account

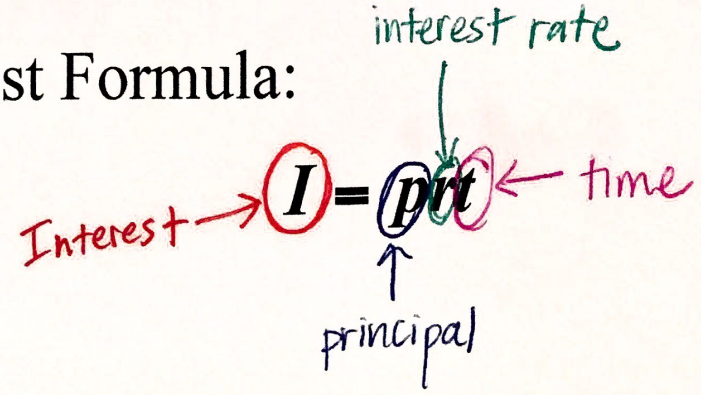
* Change to fraction or decimal

Time: in years

6 months: $\frac{6}{12} = \frac{1}{2} = .5$ 4 months: $\frac{4}{12} = \frac{1}{3}$

3 months: $\frac{3}{12} = \frac{1}{4}$

Simple Interest Formula:



Ex. 1) Arnold puts $580 into a savings account. The account pays 3% simple interest. $I = prt$

a. Write an equation to model this situation.

$I = (580)(.03)t$

$I = 17.4t$

$I = ?$
$p = \$580$
$r = 3\% = .03$
$t = ?$

b. How much interest will he earn in 5 years?

$I = (17.4)(5)$

$I = \$87$

$t = 5$ years

c. How much interest will he earn in 6 months?

$I = (17.4)(.5)$

$I = \$8.70$

$t = 6$ months $= .5$ years

Find the amount of interest:

Ex. 2) $2000 at 4% simple interest for 5 years. $I = prt$

$I = ?$
$p = \$2000$
$r = 4\% = .04$
$t = 5$

$I = (2000)(.04)(5)$

$I = \$400$

Ex. 3) $1000 at 18% per year for 6 months.

$I = prt$

$I = ?$
$p = \$1000$
$r = 18\% = .18$
$t = \frac{6}{12} = .5$

$I = (1000)(.18)(.5)$

$I = \$90$

Ex. 4) You put $1,000 in the bank for one year and earned $225 in interest. What was the interest rate as a percent?

$I = prt$

$225 = (1000)(r)(1)$

$\frac{225}{1000} = \frac{1000r}{1000}$

$0.225 = r$

$I = \$225$
$P = \$1000$
$r = ?$
$t = 1$

$r = 22.5\%$

Ex. 5) You are buying a car for $8,000. You borrow money from your parents with an 8% annual interest on the car amount. Find the **interest** paid on the car after two years and then the **new balance** of the car after two year.

$I = prt$

$I = (8000)(.08)(2)$

$I = \$1,280$

$I = ?$
$P = \$8000$
$r = 8\% = .08$
$t = 2$

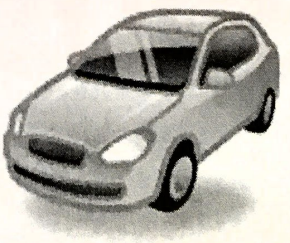
Interest: $1,280

New Balance: $9,280

principal + interest

$\$8000 + \$1,280 =$

$\$9,280$



Solve for the original price.

Ex. 6) Discount: 40% 100% - 40% = 60%

Sales price w/discount: $34.80

$34.80 is 60% of the original price.

$\frac{\$34.80}{x} \times \frac{60}{100}$

$\frac{60x}{60} = \frac{3480}{60}$

$x = \$58$

Ex. 7) Discount: 8% 100 - 8 = 92%

Sales price w/discount: $14.72

$14.72 is 92% of the original price

$\frac{14.72}{x} \times \frac{92}{100}$

$\frac{92x}{92} = \frac{1472}{92}$

$x = 16$

$16

Ex. 8) A ring is on sale for $2999. This is 35% of the original price. What is the original price of the ring?

Not discount: 35%

Sale price w/ discount: $2999

$2999 is 35% of the original price.

$\frac{2999}{x} \times \frac{35}{100}$

$\frac{35x}{35} = \frac{299900}{35}$

$x = \$8,568.57$