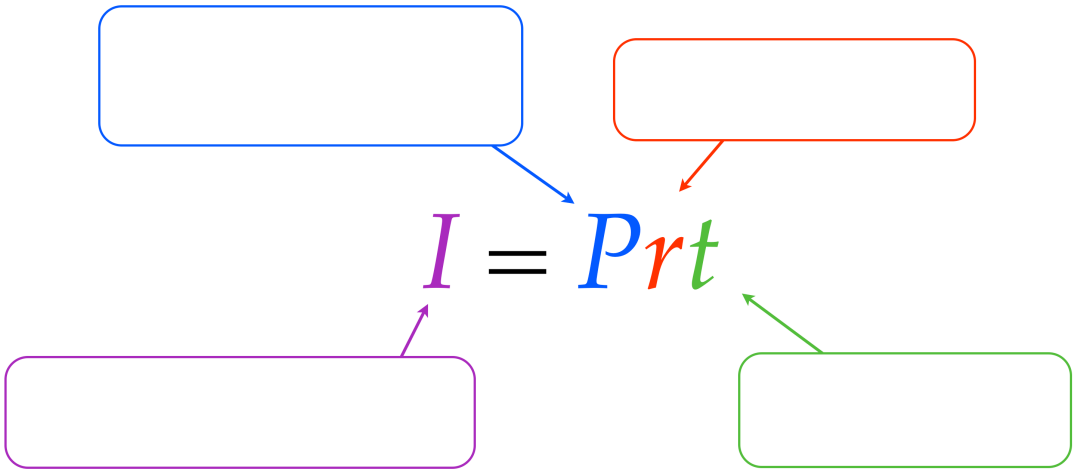
Simple Interest and Compound Interest

Name _____

Date _____ Period _____

Simple Interest



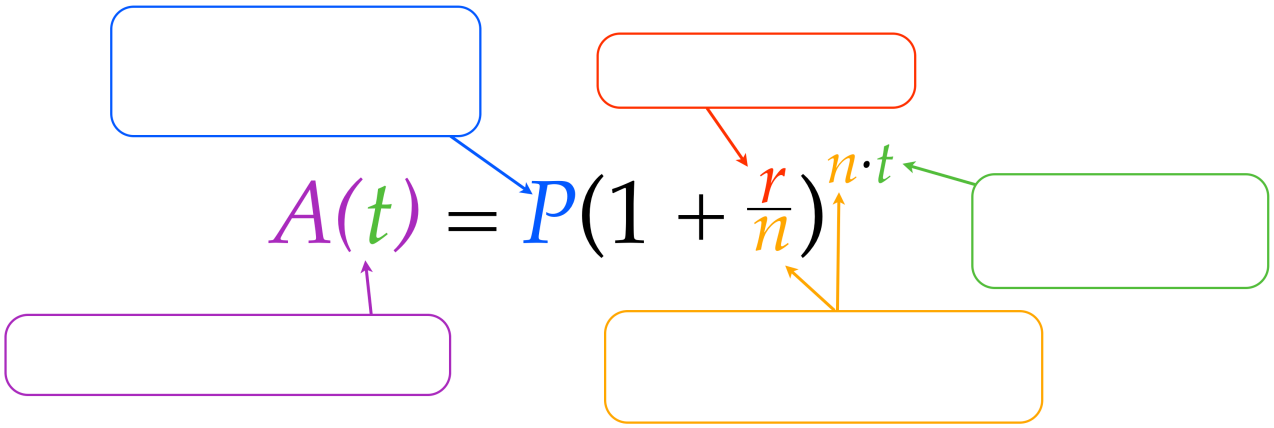
Simple Interest $I = Prt$

What is the simple interest due if $1,500 is borrowed for 2 years at a simple interest rate of 8% per year.

Simple Interest $I = Prt$

A bank account pays 6% interest that compounds quarterly. If you invest $2,000 and the interest if left to accumulate, how much will be in your account after 1 year?

Compound Interest



Compounded Annually;
Compounded Semiannually;

Compounded Quarterly;
Compounded Monthly;

Compound Interest $A(t) = P(1 + \frac{r}{n})^{n \cdot t}$

You deposit $500 in a bank account that pays you 8% interest. How much money will you have in 10 years if your interest is compounded annually? quarterly? monthly?

Compound Interest $A(t) = P(1 + \frac{r}{n})^{n \cdot t}$

You deposit $500 in a bank account that pays you 8% interest. How much money will you have in 10 years if your interest is compounded annually? quarterly? monthly?

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Annually	Quarterly	Monthly
$A(10) \approx \$1080$	$A(10) \approx \$1105$	$A(10) \approx \$1109.82$

Compound Interest $A(t) = P(1 + \frac{r}{n})^{n \cdot t}$

A bank account pays 6% interest that compounds quarterly. If you invest $2,000 and the interest if left to accumulate, how much will be in your account after 1 year?

First Quarter	Second Quarter	Third Quarter	Fourth Quarter
$P = \$2{,}000$ $r = .06$ $t = \frac{1}{4}$	$P = \$2{,}030$ $r = .06$ $t = \frac{1}{4}$	$P = \$2{,}060.45$ $r = .06$ $t = \frac{1}{4}$	$P = \$2{,}091.36$ $r = .06$ $t = \frac{1}{4}$
$I = 2{,}000 \cdot .06 \cdot \frac{1}{4}$	$I = 2{,}030 \cdot .06 \cdot \frac{1}{4}$	$I = 2{,}060.45 \cdot .06 \cdot \frac{1}{4}$	$I = 2{,}091.36 \cdot .06 \cdot \frac{1}{4}$
$I = \$30$	$I = \$30.45$	$I = \$30.91$	$I = \$31.37$

End of Year Total $= \$2{,}091.36 + \$31.37 = \$2{,}122.73$

Compound Interest $A(t) = P(1 + \frac{r}{n})^{n \cdot t}$

A bank account pays 6% interest that compounds quarterly. If you invest $2,000 and the interest if left to accumulate, how much will be in your account after 1 year?

Quarterly

$A(1) = \$2{,}122.73$