Simple Interest

Formula

I = prt

I = PRT

- I = interest earned (amount of money the bank pays you)

- P = Principal amount invested or borrowed.

- R = Interest **Rate** usually given as a percent (must changed to decimal before substituting it into formula)

- T = Time (must be measured in years) or converted to years by dividing by 12 months

I = PRT

Solve for one of variables:

- **Solving for I**
- **Substitute in numbers for P, R, & T.**
- **Then multiply**

- **Solving for other variables**
- **Substitute in what you know.**
- **Multiply the numbers that are on same side then divide by that answer.**

A savings account is set up so that the simple interest earned on the investment is moved into a separate account at the end of each year. If an investment of $5,000 is invested at 4.5%, what is the total simple interest accumulated in the checking account after 2 years.

Substitute In!!

I

P

R

T

- **Interest paid by bank is unknown**
- **Principal (invested)**
- **Rate changed to decimal**
- **Time is 2 years**
- **Multiply**

A savings account is set up so that the simple interest earned on the investment is moved into a separate account at the end of each year. If an investment of $5,000 is invested at 4.5%, what is the total simple interest accumulated in the checking account after 2 years.

- **Interest paid by bank is unknown**
- **Principal (invested)**
- **Rate changed to decimal**
- **Time is 2 years**
- **Multiply**

- **I = PRT**

- **I=** **(5,000)(.045)(2)**

- **I=$450**

A savings account is set up so that the simple interest earned on the investment is moved into a separate account at the end of each year. If an investment of $7,000 is invested at 7.5%, what is the total simple interest accumulated in the checking account after 3 years.

Substitute In!!

- **Interest paid by bank is unknown**
- **Principal (invested)**
- **Rate changed to decimal**
- **Time is 3 years**
- **Multiply**

I

P

R

T

A savings account is set up so that the simple interest earned on the investment is moved into a separate account at the end of each year. If an investment of $7,000 is invested at 7.5%, what is the total simple interest accumulated in the checking account after 3 years.

- $I = PRT$
- $I = (7,000)(.075)(3)$
- $I = \$1575$

- Interest paid by bank is unknown
- Principal (invested)
- Rate changed to decimal
- Time is 3 years
- Multiply

When invested at an annual interest rate of 6% an account earned $180.00 of simple interest in one year. How much money was originally invested in the account?

Substitute In!!

I
P
R
T

- Interest paid by bank
- Principal (invested) is unknown
- Rate changed to decimal
- Time is 1 year
- Multiply
- Divide

When invested at an annual interest rate of 6% an account earned $180.00 of simple interest in one year. How much money was originally invested in account?

- I = PRT

- 180= $P(.06)(1)$

- $\dfrac{180}{.06} = \dfrac{.06P}{.06}$

3,000 = P

- Interest paid by bank
- Principal (invested) is unknown
- Rate changed to decimal
- Time is 1 year
- Multiply
- Divide

When invested at an annual interest rate of 7% an account earned $581.00 of simple interest in one year. How much money was originally invested in the account?

I =

P =

R =

T =

- **Interest paid by bank**
- **Principal (invested) is unknown**
- **Rate changed to decimal**
- **Time is 1 year**
- **Multiply**
- **Divide**

When invested at an annual interest rate of 7% an account earned $581.00 of simple interest in one year. How much money was originally invested in the account?

- I = PRT
- 581= $P(.07)(1)$
- $\dfrac{581}{.07} = \dfrac{.07P}{.07}$
- $8,300 = P$

- Interest paid by bank
- Principal (invested) is unknown
- Rate changed to decimal
- Time is 1 year
- Multiply
- Divide

A savings account is set up so that the simple interest earned on the investment is moved into a separate account at the end of each year. If an investment of $7,000 accumulate $910 of interest in the account after 2 years, what was the annual simple interest rate on the savings account?

Plug it In!!

I

P

R

T

- **Interest paid by bank**
- **Principal (invested)**
- **Rate is unknown**
- **Time is 2 years**
- **Regroup & Multiply**
- **Divide**
- **Change to %**

A savings account is set up so that the simple interest earned on the investment is moved into a separate account at the end of each year. If an investment of $7,000 accumulate $910 of interest in the account after 2 years, what was the annual simple interest rate on the savings account?

- I = PRT
- 910= $(7,000)(R)(2)$
- 910 = (7,000)(2)R
- 910 = 14,000 R

~~14,000~~ ~~14,000~~

0.065 = R

6.5% = R

- Interest paid by bank
- Principal (invested)
- Rate is unknown
- Time is 2 years
- Regroup & Multiply
- Divide
- Change to %

A savings account is set up so that the simple interest earned on the investment is moved into a separate account at the end of each year. If an investment of $2,000 accumulate $360 of interest in the account after 4 years, what was the annual simple interest rate on the savings account?

Plug it In!!

I

P

R

T

- **Interest paid by bank**
- **Principal (invested)**
- **Rate is unknown**
- **Time is 4 years**
- **Regroup & Multiply**
- **Divide**
- **Change to %**

A savings account is set up so that the simple interest earned on the investment is moved into a separate account at the end of each year. If an investment of $2,000 accumulate $360 of interest in the account after 4 years, what was the annual simple interest rate on the savings account?

- I = PRT
- 360= $(2,000)(R)(4)$
- 360 = (2,000)(4)R
- 360 = 8,000 R

8,000 8,000

0.045 = R

4.5% = R

- Interest paid by bank
- Principal (invested)
- Rate is unknown
- Time is 4 years
- Regroup & Multiply
- Divide
- Change to %

Sylvia bought a 6-month $1900 certificate of deposit. At the end of 6 months, she received a $209 simple interest. What rate of interest did the certificate pay?

Plug It In!!

I

P

R

T

Sylvia bought a 6-month $1900 certificate of deposit. At the end of 6 months, she received a $209 simple interest. What rate of interest did the certificate pay?

- I=PRT

$209=$ $1900(R)(6/12)$

$209=(1900)(6/12)R$

$209=950R$

$$\frac{209}{950} = \frac{950R}{950}$$

$0.22 = R$

$22\% = R$

- Interest paid by bank
- Principal (invested)
- Rate is unknown
- Time is 6 months
  (divide by 12)
- Regroup & Multiply
- Divide
- Change to %

An investment earns 4.5% simple interest in one year. If the money is withdrawn before the year is up, the interest is prorated so that a proportional amount of the interest is paid out. If $2400 is invested, what is the total amount that can be withdrawn when the account is closed out after 2 months?

Plug it In!!

I

P

R

T

An investment earns 4.5% simple interest in one year. If the money is withdrawn before the year is up, the interest is prorated so that a proportional amount of the interest is paid out. If $2400 is invested, what is the total amount that can be withdrawn when the account is closed out after 2 months?

- I=PRT

- I=(2400)(.045)(2/12)

  I=$18

$18 + $2400 = $2418

$2418 will be withdrawn

- Interest paid by bank - Unknown
- Principal (invested)
- Rate is .045
- Time is 2 months (divide by 12)
- Multiply
- Now, since the money is being withdrawn, add the interest to the principal.

Compound Interest

Formula

$$A = P(1 + r)^t$$

A = Accrued Amount (Principal + Interest)
P = Principal
r = Rate
t = Time (in years)