SIMPLE INTEREST PRACTICE PROBLEMS

When money is borrowed, the institution lending the money expects to be paid back the amount borrowed plus an additional charge for the use of the money. This charge is called interest. Likewise, when money is deposited into an account, the depositor is paid interest for the use of the money. Here are some key terms associated with borrowing or lending money.

**Principal (P):** the amount of money either deposited or borrowed
**Interest Rate (r):** the percent used in computing interest (written in decimal form)
**Time (t):** the length of time the money is deposited or borrowed in years.
**Interest (I):** the amount of money paid for the use of the principal amount.

To calculate the interest charged or earned on an amount deposited or borrowed we use the following simple interest formula.

**SIMPLE INTEREST FORMULA**

\[ \text{Interest} = \text{principal} \cdot \text{rate} \cdot \text{time} \]

Or

\[ I = Prt \]

where the rate \( r \) is expressed in decimal form and \( t \) is in years.
**Example 1:**
Jordan deposited $500 into an account that earns 7% interest each year. How much interest will he earn in 3 years?

**Solution:**

To solve, we use $P = 500$ as the principal amount (deposited)
$r = 0.07$ (7% in decimal form)
$t = 3$ years

To find the interest earned, we use

$I = Prt$
$I = 500(0.07)(3) = 105.$

Therefore, Jordan will earn $105 in 3 years.

**Example 2:**
Luann borrowed $1500 from a bank that is charging 6% interest. If she pays the loan off in 6 months how much interest will she pay?

**Solution:**

$P = 1500$
$r = 0.06$
$t = 0.5$ or $\frac{1}{2}$ (remember, $t$ must be in years, so write 6 months/12 months as $\frac{1}{2}$ of a year)

$I = Prt$
$I = 1500(0.06)(0.5) = 45$

Therefore, Luann will pay $45 in interest for the loan.
Example 3:
David invested $2000 in an account paying 4.5% interest per year for 5 years.

a) How much interest will David earn at the end of 5 years?

b) How much will be in David’s account at the end of 5 years?

Solution:
a) 
P = 2000
r = 0.045
t = 5

I = Prt

I = 2000(0.045)(5) = 450

Therefore, David will earn $450 dollars in interest over the 5 years.

b) 
At the end of the 5 years David will have the original $2000 he started with plus the $450 he earned in interest. Therefore, at the end of 5 years David will have $2000 + $450 in the account, or $2450.
Simple Interest Practice Problems

Solve each of the following simple interest problems.

1. Kesha deposited $1500 into an account that earns 6% interest each year. How much interest will she earn in 5 years?

2. Kyle deposited $2200 into an account that earns 3.8% interest each year. How much interest will he earn in 2 years?

3. Jessie borrowed $750 from a bank that is charging 8.5% interest. If she pays the loan off in 9 months how much interest will she pay?

4. Lee invested $5000 in an account paying 5% interest per year for 7 years.
   a) How much interest will Lee earn at the end of 7 years?
   b) How much will be in Lee’s account at the end of 7 years?

5. Rae invested $600 in an account paying 7.2% interest per year for 4 years.
   a) How much interest will Rae earn at the end of 4 years?
   b) How much will be in Rae’s account at the end of 4 years?
Answers to Simple Interest Practice Problems:

1. $450
2. $167.20
3. $47.81
4a. $1750
4b. $6750
5a. $172.80
5b. $772.80