# Math 107

# Spring 2017

# Lecture 12

---

Simple Interest:

$$I = P \cdot r \cdot t$$

Deposit $500 for 2.5 years @ 6% rate (APR)

$$P = 500 \qquad t = 2.5 \qquad r = .06$$

Amount of interest

$$I = P \cdot r \cdot t$$
$$= 500(2.5)(.06) \Rightarrow \boxed{\$75}$$

Lisa deposit some money for 1 Year at 4% and $800 more than that at 6% for 1 Year as well.

She earned $108 in total interest. How much Per account?

| Accts | P | r | t | Interest |
|-------|-----|-----|-----|----------|
| 4% Acct | $x$ | 4% | 1 | $.04x$ |
| 6% Acct | $x+800$ | 6% | 1 | $.06(x+800)$ |

$$.04x + .06(x+800) = 108$$

Solve $.04x + .06(x+800) = 108$

$$.04x + .06x + 48 = 108$$

---

$$.1x + 48 = 108$$

$$.1x = 108 - 48$$

$$.1x = 60$$

$$x = \frac{60}{.1} \qquad \boxed{x = 600}$$

$600 @ 4% Acct

&

$1400 @ 6% Acct.

John deposited some money @ 5% for 1 year.

He also deposited $1000 less than twice that amount @ 8% for 1 year.

He earned a total of $340 in simple interest in 1 Yr. How much per account?

| Acct | P | r | t | I |
|------|---|---|---|---|
| 5% | $x$ | 5% | 1 | $.05x$ |
| 8% | $2x - 1000$ | 8% | 1 | $.08(2x - 1000)$ |

$$.05x + .08(2x - 1000) = 340$$

---

$$.05x + .08(2x - 1000) = 340$$

$$.05x + .16x - 80 = 340$$

$$.21x = 340 \quad +80$$

$$.21x = 420$$

$$x = \frac{420}{.21} \qquad \boxed{x = 2000}$$

$2000 @ 5% Acct

$3000 @ 8% acct.

Tanya had $5000.
She deposited some @ 3%, and the rest @ 1%.
Simple interest for 2 yrs.

She earned $260 in
Simple interest. How much per account?

$4000 @ 3%
$1000 @ 1%

| Acct | P | r | t | I |
|------|-----|----|---|------------------|
| 3% | $x$ | 3% | 2 | $x \cdot .03 \cdot 2$ |
| 1% | $5000-x$ | 1% | 2 | $(5000-x) \cdot .01 \cdot 2$ |

$.06x + .02(5000-x) = 260$

$.06x + 100 - .02x = 260$

$.04x = 160$

$x = \dfrac{160}{.04} = 4000$

---

Mark deposited a total of $10,000 in
two accounts, simple interest for 6 months.

One account paid 4% and another one 7% APR.
He made $282.50 in total interest.
How much per account?

6 months = .5 Year

| Accts | P | r | t | I |
|-------|---------|----|----|-----------------------|
| 4% | $10000-x$ | 4% | .5 | $(10000-x) \cdot .04 \cdot .5$ |
| 7% | $x$ | 7% | .5 | $x \cdot .07 \cdot .5$ |

$.02(10000-x) + .035 x = 282.50$

$$.02(10000 - x) + .035\,x = 282.50$$

$$200 - .02x + .035x = 282.50$$

$$.015x = 282.50 - 200$$

$$.015x = 82.50$$

$$x = \frac{82.50}{.015} \qquad x = 5500$$

$5500 @ 7\%$ acct

&

$4500 @ 4\%$ Acct.

---

I am in room G5-004
from 6:15 AM to 11:30 AM.   M-Th.
Drop off any work You have.
Your deadline is Thursday
                        June 1, 2017

To get Your final grade in Person
only ⇒ G5-004 on Monday June 5th.
from 6:15 AM to 11:30 AM.