Math 107

Fall 2016

Lecture 13

Ch. 9 Simple interest:

$I = prt$

Deposit \$500 for 1 year at 4% APR.

Interest? $I = prt$

$= \cancel{500}^{5} \cdot \frac{4}{\cancel{100}} \cdot 1 = 20$

Interest \$20

Deposit \$1200 @ 3.5% APR for (6 month) $\frac{1}{2}$ yr.

Find the amount of interest. $I = prt$

$I = \cancel{1200}^{6} \cdot \frac{3.5}{\cancel{100}} \cdot \frac{1}{\cancel{2}}$

$I = 6(3.5)$

$I = 21$

\$21

Tanya opened two accounts.
Simple interest for one year.
One pays 3% and other one 4%.
The 4% account's deposit was $200 more than the other account. She earned $36 in total interest. How much per account?

Accounts	P	r	t	I
3% acct	x	3%	1	$\frac{3}{100}x$
4% Acct	$x+200$	4%	1	$\frac{4}{100}(x+200)$

Total interest is 36

$.03x + .04(x+200) = 36$

$.03x + .04x + 8 = 36$

$.07x + 8 = 36$

$.07x = 36 - 8$

$.07x = 28$

$x = \frac{28}{.07} = 400$

$400 @ 3% acct

$600 @ 4% acct

Lisa deposited Some money at 5% Account and $1000 more than twice that amount at 6% Account. After one Year, Simple interest, She earned a total of $1250 in interest. How much per account?

Acct	P	r	t	I
5% Acct	x	5%	1	$.05x$
6% Acct	$2x+1000$	6%	1	$.06(2x+1000)$

Total interest is 1250

$$.05x + .06(2x+1000) = 1250$$

$$.05x + .12x + 60 = 1250$$

$$.17x = 1250 - 60$$

$$.17x = 1190$$

$$x = \frac{1190}{.17} \quad \boxed{x = 7000}$$

$7000 @ 5% Acct

$15000 @ 6% Acct.

Allen got his tax return. He deposited a total of $10,000 into two accounts for one year Simple interest. At the end, he earned $410 in total interest. One account paid 2%, the other one paid 5%.

APR

Accounts	P	r	t	I
2% Acct	x	2%	1	$.02x$
5% Acct	$10000-x$	5%	1	$.05(10000-x)$

Total interest is 410

$.02x + .05(10000-x) = 410$

$.02x + 500 - .05x = 410$

$-.03x = 410 - 500$

$-0.03x = -90$

$x = \frac{-90}{-.03}$ $x = 3000$

$3000 @ 2% Acct & $7000 @ 5% Acct

Mary found $15000 in a Los Vegas restroom. She reported to the police. After 1 month, nobody claimed the money. She deposited some money @ 4%, twice as much @ 6%, and the rest @ 5%. After 1 year, she got $790 in simple interest. How much per account?

Accounts	P	r	t	I
4% Acct	x	4%	1	$.04x$
6% Acct	$2x$	6%	1	$.06 \cdot 2x$
5% Acct	$15000-3x$	5%	1	$.05(15000-3x)$

$$.04x + .06 \cdot 2x + .05(15000-3x) = 790$$

$$.04x + .12x + 750 - .15x = 790$$

$$.16x - .15x = 790 - 750$$

$$.01x = 40 \qquad x = \frac{40}{.01} \qquad x = 4000$$

$4000 @ 4%

$8000 @ 6%, and $3000 @ 5%

Monday → Ch. 9 Due, we work on Ch. 10.