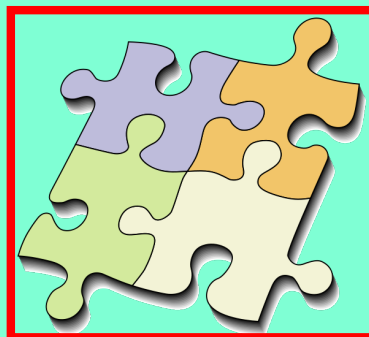


Math 107
Fall 2017
Lecture 12



Lisa has \$5.70.

Dimes & Quarters only.

She has 27 Coins.

How many of each?

Dimes Quarters

$$26 = 27 - 1 \quad 1$$

$$22 = 27 - 5 \quad 5$$

$$17 = 27 - 10 \quad 10$$

20 Quarters
 & 7 Dimes

Coin	worth	How many	Value
Dimes	10¢	$27 - x$	$10(27 - x)$
Quarters	25¢	x	$25x$

$$10(27 - x) + 25x = 570$$

$$270 - 10x + 25x = 570$$

$$270 + 15x = 570$$

$$15x = 570 - 270$$

$$15x = 300$$

$$x = \frac{300}{15}$$

$$x = 20$$

John purchased 20 pens.

Red and Black only.

Red pen \rightarrow 75¢

Black pen \rightarrow \$1

Total cost \rightarrow \$18

How many of each?

Red Black

$$20 - 1 = 19$$

$$1$$

$$20 - 4 = 16$$

$$4$$

$$20 - x$$

$$x$$

Pens	worth	How many?	Value
Red	75¢	$20 - x$	$75(20 - x)$
Black	100¢	x	$100(x)$

$$100x + 75(20 - x) = 1800$$

$$100x + 1500 - 75x = 1800$$

$$25x + 1500 = 1800$$

$$25x = 1800 - 1500$$

$$25x = 300 \quad x = 12$$

School paid \$148 for 24 tkts for a trip to the zoo.

Adult \rightarrow \$12

kid \rightarrow \$5

How many adult tkts was purchased?

TKT	worth	How many?	Value
Adults	\$12	x	$12x$
kids	\$5	$24 - x$	$5(24 - x)$

$$12x + 5(24 - x) = 148$$

$$12x + 120 - 5x = 148$$

$$7x + 120 = 148$$

$$7x = 148 - 120$$

$$7x = 28$$

$$x = \frac{28}{7}$$

$$x = 4$$

4 Adults

Simple Interest:

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

↑ ↑ ↑ ↗
 Interest Deposit Annual rate time in Yrs

Ana deposited \$500 for 2 years at 4% APR in Simple interest account.

$$I = P \cdot r \cdot t = 500 \cdot \frac{4}{100} \cdot 2 = 40$$

Interest
\$40

Brian had \$4000.

He deposited \$1000 in BofA, Simple interest at 3% APR for a Year.

He took the rest of that money to Wellsfargo, Simple interest account for 2 Yrs at 4.5% APR.

Find Total earned Simple interest.

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

$$= \cancel{1000} \cdot \frac{3}{\cancel{100}} \cdot 1 = \boxed{\$30}$$

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

$$= \cancel{3000} \cdot \frac{4.5}{\cancel{100}} \cdot 2 = \boxed{\$270}$$

His total earned simple interest $\Rightarrow \$30 + \270
 $\Rightarrow \$300.$

Accounts	P	R	T	I
BoFA	x	3%	1	$.03x$
Wells Fargo	$4000 - x$	4.5%	2	$.045 \cdot 2(4000 - x)$

\$4000 in total $.03x + .045 \cdot 2(4000 - x) = 300$

Total interest $.03x + .09(4000 - x) = 300$

Multiply by 100.

$$3x + 9(4000 - x) = 30000$$

$$3x + 36000 - 9x = 30000$$

$$-6x + 36000 = 30000$$

$$-6x = 30000 - 36000$$

$$-6x = -6000$$

$$x = \frac{-6000}{-6}$$

$$x = 1000$$

B of A

\$1000

$$4000 - 1000 = 3000$$

\$3000 in
wellsfargo