Math 107

Fall 2016

Lecture 12

find two consecutive odd integers such that the sum of smaller one and twice the larger one is 55.

x & $x+2$

Smaller Larger

17 & 19

Smaller + 2 larger = 55

$x + 2(x+2) = 55$

$x + 2x + 4 = 55$

$3x + 4 = 55$

$3x = 55 - 4$

$3x = 51$

$x = \frac{51}{3}$ $\boxed{x = 17}$

Find two consecutive even integers such that when 3 times the smaller one is reduced by twice the larger one, the result is 12.

x & $x+2$

Smaller larger

16 & 18

$3 \cdot \text{Smaller} - 2 \cdot \text{larger} = 12$

$3x - 2(x+2) = 12$

$3x - 2x - 4 = 12$

$x - 4 = 12$

$x = 12 + 4$

$\boxed{x = 16}$

Lisa has 85¢ in nickels & dimes only. The number of nickels is 1 more than twice the number of dimes. How many of each?

Type	Worth	How many?	Value
Nickels	5 ¢	$2x+1$	$5(2x+1)$
Dimes	10 ¢	x	$10x$

Total Value = 85¢

$5(2x+1) + 10x = 85$

$10x + 5 + 10x = 85$

$20x + 5 = 85$

$20x = 85 - 5$

$20x = 80$

$\boxed{x = 4}$

4 Dimes & 9 Nickels

School paid \$77 for tkts to take some kids and some parents to the zoo.

Kid's tkt → \$4 , Adult's tkts → \$7

The number of kids was 1 fewer than 5 times the number of adults.

How many of each?

Type	Worth	How many?	Value
Kids	\$4	$5x-1$	$4(5x-1)$
Adults	\$7	x	$7x$

$4(5x-1)+7x=77$

$20x-4+7x=77$

$27x-4=77$

$27x=77+4$

$27x=81$

$x=\frac{81}{27}$

$\boxed{x=3}$

3 Adults & 14 Kids

Mr. Flores paid \$7.25 to buy some HB & some FF.

HB → \$1.25 , FF → \$.75

He ordered 7 items in total. Find how many of each?

HB	FF
1	7-1
2	7-2
x	$7-x$

Type	Worth	How many	Value
HB	1.25	x	$1.25x$
FF	.75	$7-x$	$.75(7-x)$

$1.25x+.75(7-x)=7.25$

$125x+75(7-x)=725$

$125x+525-75x=725$

$50x+525=725$

$50x=725-525$

$50x=200$

$\boxed{x=4}$

4 HB & 3 FF

Jose has $1.95 in nickels & Quarters only.
He has a total of 15 Coins.
How many of each?

Nickels	Quarters
1	15-1
3	15-3
7	15-7
x	15-x

Type	Worth	How many	Value
Nickels	5	x	$5x$
Quarters	25	$15-x$	$25(15-x)$

$$5x + 25(15-x) = 195$$

$$5x + 375 - 25x = 195$$

$$-20x + 375 = 195$$

$$-20x = 195 - 375$$

$$-20x = -180$$

$$x = \frac{-180}{-20}$$

$$\boxed{x = 9}$$

9 Nickels
&
6 Quarters

Jose has $1.95 in nickels & Quarters only.
He has a total of 15 Coins.
How many of each?

Type	Worth	How many	Value
Nickels	5	$15-x$	$5(15-x)$
Quarters	25	x	$25x$

$$25x + 5(15-x) = 195$$

$$25x + 75 - 5x = 195$$

$$20x + 75 = 195$$

$$20x = 195 - 75$$

$$20x = 120$$

$$x = 6$$

6 Quarters
&
9 Nickels

What is ahead?

Turn in any work.

Mixture

Solution A	+	Solution B	=	Mixture Soln.