

#### 4.4: Money Problems

Ex. 1) Frank collects baseball cards. He has two more \$5 cards than \$2 cards, and their total value is \$262. How many of each does he have?

Number of \$2 cards	Number of \$5 cards	Value of \$2 cards	Value of \$5 cards	Total Value
$x$	$x+2$	$2(x)$	$5(x+2)$	262

$$\therefore 2x + 5(x+2) = 262$$

$$2x + 5x + 10 = 262$$

$$7x = 252$$

$$x = 36$$

$\therefore$  There are 36 \$2 cards  
and 38 \$5 cards.

Ex. 2) Jim's piggybank contains nickels and dimes. There are fifteen more nickels than dimes for a total of \$14.55. Find the number of nickels and dimes.

Number of nickels	Number of dimes	Value of nickels	Value of dimes	Total Value
$x+15$	$x$	$0.05(x+15)$	$0.1(x)$	14.55

$$0.05(x+15) + 0.1x = 14.55$$

$$0.05x + 0.75 + 0.1x = 14.55$$

$$0.15x = 13.8$$

$$x = 92$$

$\therefore$  Jim's Piggybank has 92 dimes  
and 107 nickels.

Ex. 3) A parking meter contains \$27.05 in quarters and dimes. There are 146 coins. How many quarters are there?

Number of quarters	Number of dimes	Value of quarters	Value of dimes	Total Value
$x$	$146-x$	$0.25x$	$0.1(146-x)$	\$27.05

$$0.1(146-x) + 0.25x = 27.05$$

$$14.6 - 0.1x + 0.25x = 27.05$$

$$0.15x = 12.45$$

$$x = 83$$

$\therefore$  The parking meter had 83 quarters and  
63 dimes.

**Extra Practice:** Sit with your leader and complete the problems below.

1. Jeff has \$35.70 made up of loonies and dimes. If he has five times as many loonies as dimes, how many dimes does he have? Let  $x$  represent # of dimes

$\therefore 5x$  represents number of loonies.

$$\therefore (5x)(1) + x(0.1) = 35.70$$

$$5x + 0.1x = 35.70$$

$$5.1x = 35.70$$

$$x = 7$$

$\therefore$  Jeff has 7 dimes and 35 Loonies.

2. Jacob has \$21.90 made up of dimes and quarters. If there are 117 coins in all, how many quarters are there? Let  $x$  represent # of dimes

$\therefore 117 - x$  represents # of quarters.

$$0.1x + 0.25(117 - x) = 21.90$$

$$0.1x + 29.25 - 0.25x = 21.90$$

$$-0.15x = -7.35$$

$$x = 49$$

$\therefore$  Jacob had 49 dimes and 68 quarters.

3. Heather has \$300 made up of \$5 and \$10 bills. If there are 3 more \$10 bills than \$5 bills, how many \$5 bills does she have?

Let  $x$  represent # of \$5 bills

$\therefore x + 3$  represents # of \$10 bills.

$$5x + 10(x + 3) = 300$$

$$5x + 10x + 30 = 300$$

$$15x = 270$$

$$x = 18$$

(Heather has) 18 \$5 bills  
 $\therefore$  There are

and 21 \$10 bills.