

1. May bought an MP3 player for \$105. She paid for it with \$5 bills and \$20 bills. If she used 6 more \$5 bills than \$20 bills, how many were there of each?

let "t" be the number of \$20 bills

	\$5	\$20
number	t+6	t
value	5(t+6)	20t

$$5(t+6) + 20t = 105$$

$$5t + 30 + 20t = 105$$

$$25t + 30 = 105$$

$$25t = 105 - 30$$

$$\frac{25t}{25} = \frac{75}{25}$$

$$t = 3$$

∴ She used 3 \$20 bills and 9 \$5 bills.

2. Jeff has \$4.05 made up of nickels and dimes. If he has seven times as many nickels as dimes, how many dimes does he have?

$$\$4.05 = 405¢$$

let "d" be the number of dimes.

	dimes	nickels
number of coins	d	7d
value of coins	10d	5(7d) = 35d

$$10d + 35d = 405$$

$$\frac{45d}{45} = \frac{405}{45}$$

$$d = 9$$

∴ Jeff has 9 dimes and 63 nickels.

3. Ron has \$21.90 made up of dimes and quarters. If there are 117 coins in all, how many quarters are there?

let "q" represent the number of quarters

$$\$21.90 = 2190¢$$

	dimes	quarters
number of coins	117 - q	q
value of coins	10(117 - q)	25q

$$10(117 - q) + 25q = 2190$$

$$1170 - 10q + 25q = 2190$$

$$1170 + 15q = 2190$$

$$15q = 2190 - 1170$$

$$\frac{15q}{15} = \frac{1020}{15}$$

$$q = 68$$

∴ Ron has 68 quarters.

4. 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 "f" represent the number of \$5 bills.

	\$5	\$10
number	f	f+3
value	5f	10(f+3)

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

$$5f + 10f + 30 = 300$$

$$15f = 300 - 30$$

$$15f = 270$$

$$\frac{15f}{15} = \frac{270}{15}$$

$$f = 18$$

∴ Heather has 18 \$5 bills

5. A parking meter contained 78 coins made up on dimes and nickels. The total value of the coins was \$5.20. How many dimes did it contain?

let "d" be the number of dimes \$5.20 = 520

	dimes	nickels
number	d	78-d
value	10d	5(78-d)

$$10d + 5(78-d) = 520$$

$$10d + 390 - 5d = 520$$

$$390 + 5d = 520$$

$$5d = 520 - 390$$

$$\frac{5d}{5} = \frac{130}{5}$$

$$d = 26$$

∴ There're 26 dimes.

6. In a spy movie, agent 007 sits at the casino table with a pile of chips worth \$30000. There is an equal amount of \$100 and \$50 chips. Find the total number of chips.

let "f" be the number of \$50 chips

	\$50	\$100
number	f	f
value	50f	100f → 30,000

$$50f + 100f = 30000$$

$$\frac{150f}{150} = \frac{30000}{150}$$

$$f = 200$$

∴ There're 200 + 200
400 chips in total.

7. Frank collects baseball cards. He has the same number of \$5 cards as \$2 cards, and their total value is \$252. How many of each does he have?

let "f" be the number of \$5 cards

	\$2	\$5
number	f	f
value	2f	5f

$$2f + 5f = 252$$

$$\frac{7f}{7} = \frac{252}{7}$$

$$f = 36$$

∴ There're 36 of each