

Warm Up

Write each phrase as an expression.

Let n = the number of nickels.

Mark has 6 times as many dimes as nickels. $\text{dimes} = 6n$

Cheryl has 5 more dimes than nickels. $\text{dimes} = 5 + n$

Judy has the same number of nickels and quarters. $\text{Quarters} = n$

9/12 Notes Equations Involving Money

1. Jane has $\$2.45$ in quarters and dimes in her wallet. ★ Value * Qty
 She has the same number of quarters as dimes. Quarters = Dimes
 How many of each does she have?

Type	Value	Qty
Quarters	0.25	d
Dimes	0.10	d

1.75
 $\frac{.70}{2.45}$

$$0.25d + 0.10d = 2.45$$

7 Dimes
7 Quarters

$$0.35d = 2.45$$

$$\frac{0.35}{0.35} = \frac{2.45}{0.35}$$

$$d = 7$$

2. Tony has $\$2.50$ in nickels and dimes. = 25¢ ★ Value * Qty
 He has twice as many dimes as nickels. Dimes = 2(nickels)
 How many does he have of each?

Type	Value	Qty
nickels	0.05 = 5¢	n
dimes	0.10 = 10¢	2n

$$0.05n + 0.10(2n) = 2.50$$

$$5n + 10(2n) = 250$$

$$5n + 20n = 250$$

10 nickels
20 dimes

$$\frac{.50}{2.00} = \frac{2.50}{2.50}$$

$$\frac{25n}{25} = \frac{250}{25}$$

$$n = 10$$

3. A person gives you coins that total \$3.00. = 300¢
 They are all quarters and nickels.
 If you have 5 times as many nickels as quarters,
 how many nickels and quarters do you have?

Type	Value	Qty
Quarters	25¢	Q
Nickels	5¢	5Q

★ Value * Qty

\$3 = 300¢

$$25Q + 5(5Q) = 300$$

$$25Q + 25Q = 300$$

$$50Q = 300$$

$$\frac{50Q}{50} = \frac{300}{50}$$

$$Q = 6$$

6 Quarters
 30 Nickels

1.50
 1.50
 3.00

4. Fifteen coins, all half-dollars and quarters, total \$5.50.

How many half-dollars are there?

(HINT: Let Q = # of quarters.)

Q + # of half-dollars = 15.

So # of half-dollars = 15 - Q

$$15 = Q + h$$

$$\begin{array}{r} 15 = Q + h \\ -h \quad -h \\ \hline 15 - h = Q \end{array}$$

Type	Value	Qty
Quarters	25¢	15 - h
half dollar	50¢	h

\$5.50 = 550¢

$$25(15 - h) + 50h = 550$$