

Quincy has 20 coins in nickels and quarters. The total amount of his coins is \$2.40. How many nickels does Quincy have? How many quarters?

$N \rightarrow$ # of nickels

$Q \rightarrow$ # of quarters

$$N + Q = 20, \text{ so } N = 20 - Q.$$

$$.05N + .25Q = 2.40$$

Substitute $N = 20 - Q$ in the above equation and you get

$$.05(20 - Q) + .25Q = 2.40$$

Now, solve!

Let's get rid of the decimals by multiplying everything by 100.

$$5(20 - Q) + 25Q = 240$$

$$100 - 5Q + 25Q = 240$$

$$100 + 20Q = 240$$

$$20Q = 140$$

$$Q = 7$$

$$N = 20 - 7, \text{ so } N = 13$$

Answer: Quincy has 13 nickels and 7 quarters.