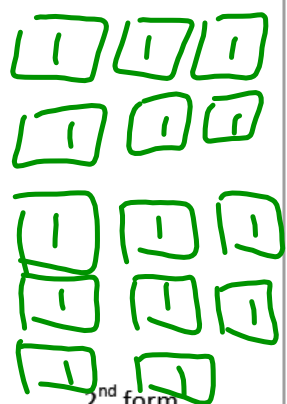## Equivalent forms of a number and Subtraction

In mathematics, it is important to realize that any number can have a literally infinite number of equivalent forms. I can refer to the number '1' as 10/10, 20/20, 30/30, etc. In the same way I can think of the value 35 as 3 tens and 5 ones, or 2 tens and 15 ones, 3 tens, 4 ones, and 10 tenths, or even 3500 hundredths.

Let's come up with some forms of the number 14. For this exercise let's think of the number 14 as 14 dollars.

$14	$14	$14	$14
[10] [1] [1] [1] [1] *1st form*	[1][1][1] [1][1][1] [1][1][1] [1][1][1] [1][1] *2nd form*	$1400 \times \boxed{.01}$ *3rd form*	$140 \times \boxed{.1}$ *4th form*

 But Mr. Potter, why is this important? Well, because different forms of a number might help us to perform different operations and solve different problems. Let's look at some examples using our $14.

1. You have $14 in your pocket. You need to pay $10 for two T-shirts. Which of the above forms could you use to pay for the T-shirts? Equation:___$14 - 10 =$_____
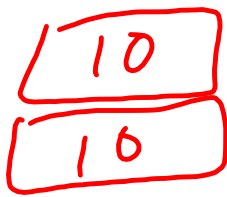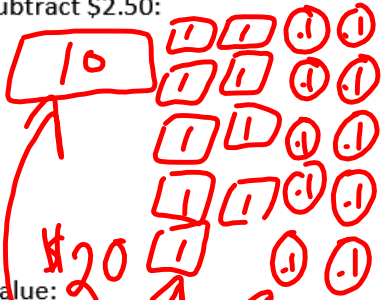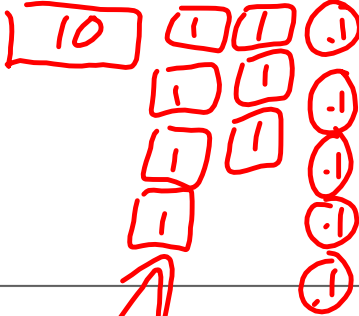
Yes	Yes	Yes	Yes

2. You have $14 in your pocket. A friend asks you for $7 and you decide to loan it to them. Which of the above forms could you use to loan your friend the money? Equation:___$14 - 7 =$_____

NO	Yes	Yes	Yes

Sometimes (especially when doing subtraction and division) it really helps to change the form of our number. Please note we don't change the value, just the form of the number. You've been doing this for years, you just might not have noticed.

You have $20 – two ten dollar bills. You go to the store and buy a bag of chips. Your total comes to $2.50. After you pay, how much money will you have left?

Equation:

Starting form:	Equivalent form that allows us to subtract $2.50:	Amount of money remaining after $2.50 is paid:
10 10 $20	10 $20	10
Value:	Value:	

This is how you've been doing it:

$$\begin{array}{r} \overset{1}{\cancel{2}}\overset{\overset{9}{\cancel{10}}}{0}.\overset{10}{0}0 \\ -\ 2.50 \\ \hline 17.50 \end{array}$$

We can extend this thinking when subtracting negative numbers. For now let's continue with our numbers as money example.

You have $20 in your bank account. You then get a refund of $6 for a purchase you made last week.

Equation:_____

Starting form:	Equivalent form that allows us to subtract $2.50:	Amount of money remaining after $2.50 is paid:
Value:	Value:	