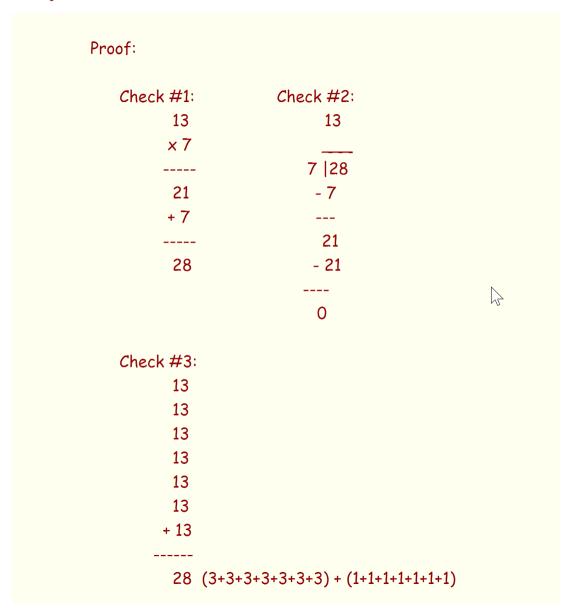
## **Abbott and Costello Magic Numbers**

Did you know that  $7 \times 13 = 28$ ?



## Check #1:

To multiply  $7 \times 13$ , we can multiply  $7 \times 3$  to get 21, then multiply  $7 \times 1$  to get 7, and add 21 + 7 which is 28.

## Check #2:

To divide 28 by 7, we can't put the 7 into the 2 but 7 goes into 8 once. We then subtract 7 from 8 and get 1. We carry down the 2 to get 21, and 7 goes into 21 three times. Thus our answer is 13.

## Check #3:

To add 13 seven times, we add 3+3+3+3+3+3 to get 21 and then add 1+1+1+1+1+1 to get 7. Then 21 plus 7 is 28.

- 1. Why is this "proof" wrong?
- 2. Find another set of three numbers that work this way! How did you find them?
- 3. Find as many Abbott and Costello magic numbers as you can.
- 4. How many are there? How do you know there aren't more?