Math Magic 7

Start:

Teacher tells the student(s) to do the following:

Step 1: Mentally pick a single digit between 1 and 9 inclusive	example:	7
Step 2: Mentally double your number		14
Step 3: Mentally add 3 to your number		17
Step 4: Mentally multiply your number by 5		85
Step 5: Mentally pick a single digit between 1 and 9 inclusive (Note: this new number can the same as the first one)		2
Step 6: Add the last number from step 6 to the number in step 5:		87

Step 7: Teacher asks a student what their last answer from step 6 is.

Mental Trick:

After the student says 87, the teacher tells them that their first number must have been a 7 and that their second number must have been a 2!

How teacher gets the answer:

a) Subtract 15 from the student's number (87 - 15 = 72)

b) The ten's digit is the student's first number picked and the units digit is the student's second number picked. (7 and 2)

Why it works:

Step 1: Let x be the first student digit.		x
Step 2: Mentally double your number		$2x$
Step 3: Mentally add 3 to your number		$2x + 3$
Step 4: Mentally multiply your number by 5	$5(2x + 3) =$	$10x + 15$
Step 5: Mentally pick a single digit between 1 and 9 inclusive (Note: this new number can the same as the first one)		y
Step 6: Add the last number from step 6 to the number in step 5:		$10x + y + 15$

After subtracting 15 the teacher is left with $10x + y$ where the ten's digit, x, is the student's first number picked and the units digit, y, is the student's second number picked.

** R. Greenlee Wheaton Warrenville South High School, Wheaton IL. 06/23/01 **