

Math Magic Trick 9

Start:

Teacher tells the person to do the following:

Step 1) Write the number of the month of your birthday	example:	6
Step 2) Multiply by 5		30
Step 3) Add 7		37
Step 4) Multiply by 4		148
Step 5) Add 13		161
Step 6) Multiply by 5		805
Step 7) Add the day of the month of your birthday (23)		828
Step 8) Subtract 205		623

Mental Trick:

Teacher tells the person their birthday of June 23rd.

How teacher gets the answer:

The tens and units digit are the birthday and the number(s) in front of the ten's digit is the month.

Why it works:

Let birth month = M and birthday = D

Step 1) Write the number of the month of your birthday.	example:	M
Step 2) Multiply by 5		5M
Step 3) Add 7		5M + 7
Step 4) Multiply by 4		4(5M + 7)
Step 5) Add 13		4(5M + 7) + 13
Step 6) Multiply by 5		5(4(5M + 7) + 13)
Step 7) Add the day of the month of your birthday (23)		5(4(5M + 7) + 13) + D
Step 8) Subtract 205		5(4(5M + 7) + 13) + D - 205

Simplifying:

$$\begin{aligned} &5(4(5M + 7) + 13) + D - 205 \\ &5(20M + 28 + 13) + D - 205 \\ &5(20M + 41) + D - 205 \\ &100M + 205 + D - 205 \\ &100M + D \end{aligned}$$