



Puzzle provided by Kordemsky: The Moscow Puzzles (Dover)

Equations to solve in your head:

$$6,751x + 3,249y = 26,751$$

$$3,249x + 6,751y = 23,249$$

Is this a joke? Not if you can multiply the first equation by 6,751 and the second by 3,249 in your head, and not if you use a second, simpler method.



Solution: $x=3$ and $y=2$.

Adding and subtracting the equations we see that the numbers become 10,000m 10,000, and 50,000; and 3,502, -3.502, and 3,502. Dividing by 10,000, and by 3,502, we obtain:
 $x + y = 5$ and $x - y = 1$. Anyone can solve such simple equations in his head.