

January 2008 M⁶ Problem

(This is the December problem with a hint.)

A goods train left Moscow at x hours and y minutes and arrived in Saratov at y hours and z minutes. The journey took z hours and x minutes. Find all possible values of x , y and z .

The time in this problem is written using 24 hours clock, i.e 4:15 pm is written as 16 hours and 15 minutes, 12:30 pm is written as 12 hours and 30 minutes, while 30 minutes after the midnight is 0 hours and 30 minutes.

Hint: To make sure that you find all the solutions do not rule out the possibility that the train arrives the next day, or even the possibility that it takes more than 24 hours to get there. Also read and write the given conditions carefully and check that your solution really works!

**Solutions can be submitted starting from noon
January 7, 2008 until midnight January 31, 2008 to
Irina Kogan via e-mail iakogan@ncsu.edu**