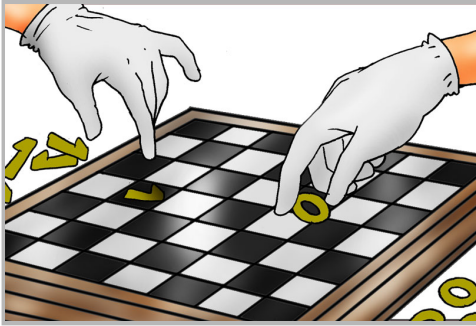


# FIVE PROBLEMS

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These problems are chosen from puzzleup.com 2017  
(weekly puzzle competition prepared by Emrehan Halici)



## 01 - ODD-EVEN

You will play a game, where you place "0" and your friend places "1" on a 7x7 chess board. You will start the game and both of you will place numbers on the empty squares alternatively. When the entire board is full, sums of the numbers on each row and column are noted. Among the 14 sums, you will get a point for each odd sum and your friend will get a point for each even sum.

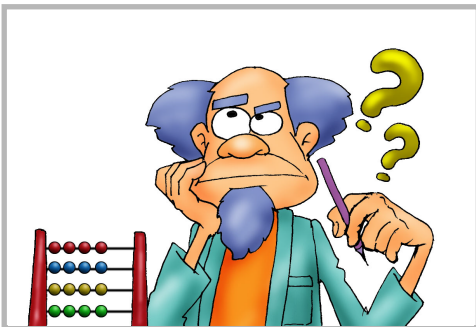
If both you and your friend play perfectly, what is the maximum points you can get?



## 02 - LOTTERY

In a lottery, every week 5 different numbers are randomly drawn from numbers between 1 and 30 (including 1 and 30).

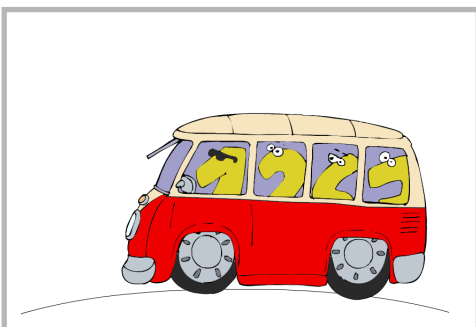
What is the probability of the 3 smallest numbers drawn this week being the same with the 3 smallest numbers drawn the previous week?



## 03 - TEN DIGIT NUMBER

A 10-digit number has distinct digits. Using all of its digits, two new numbers are created. The sum of these two numbers is 99999 and their multiplication is the same 10-digit number.

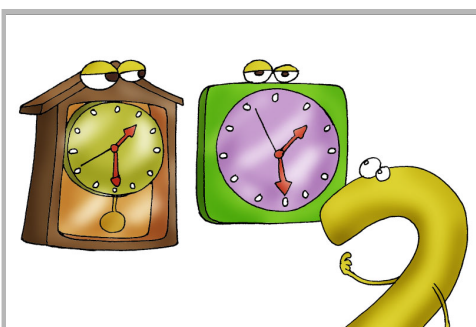
Find this 10-digit number.



## 04 - FOUR DIGITS

A number has distinct digits and for its any four consecutive digits, the multiplication of the two digits in the middle is greater than the sum of the four digits.

What is the greatest such number?



## 05 - CLOCKS

There are two analog clocks with hour, minute and second hands. One of them works correctly and the other one is broken, moving 20% faster. Both of them are set to 12:00 and observed until their second hands are at the same angle and the minute hand of the correct clock is at the same angle with the hour hand of the broken clock.

What is the time when this first happens after they are set?