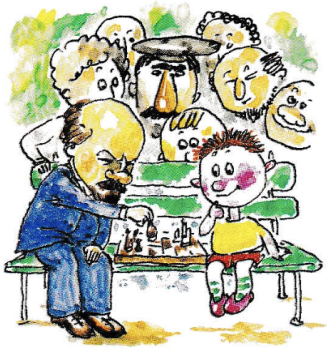
Pricey address. A building has four apartments on each floor, and the apartments are numbered consecutively. The residents of one of the floors decided to place new apartment numbers on the doors. This required seven digits, which they ordered from a firm that charged n dollars for the digit n (for example, the digit 0 was free). The residents collected 3 dollars from each apartment on the floor, which exactly covered the cost of the new digits. Which digits were ordered?

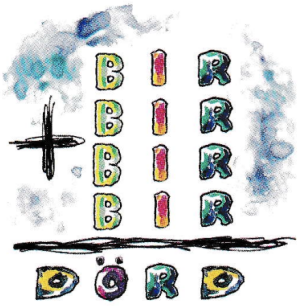
Checkmate math. At the end of a chess tournament, each participant won the same number of games playing white as all the other players, taken together, won playing black. Prove that all the participants won the same number of games.



Bench mates. Several chess players played chess in a park the whole day long. Since they had only one set of pieces, they chose the following rules: The winner of a game skips the next two games, and the loser skips the next four. How many players took part in the tournament if they managed to follow these rules? (If the game ended in a draw, the player who played white was considered the loser.)

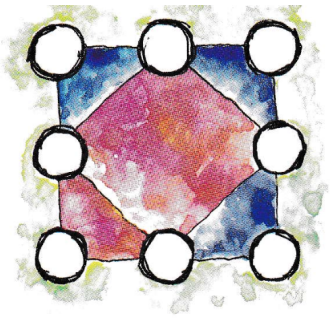
Eating into profits. After selling his last peach for \$2.30, a merchant calculated that the average price of his peaches was \$2.45. However, a buyer returned a peach because it had a worm hole. The buyer agreed to pay only \$1.58 for this peach. The merchant recalculated the average price, which became \$2.42. How many peaches did the merchant sell?

On call 24-7. The working hours of a receptionist at a hotel are either 8 A.M. to 8 P.M., 8 P.M. to 8 A.M., or 8 A.M. to 8 A.M. the next day. In the first case, the break before the next shift must be not less than 24 hours; in the second case, not less than 36 hours; and in the third case, not less than 60 hours. What is the smallest number of receptionists that can provide round-the-clock operation of the hotel?



Bir-to-bir correspondence. Solve the following number rebus. Identical letters correspond to identical digits, while different letters correspond to different digits.
(This puzzle comes to us from Azerbaijan, one of the Caucasian republics. In their language, the word BIR means one and DÖRD means four.)

A dozen and almost. Put the numbers 1 through 8 in the circles such that the sum of the numbers at the vertices of each blue triangle is 12 and the sum at the vertices of the red triangle and the red square is 11.



Connect the dots. Is it possible to mark six points in the plane, and connect some pairs of them with nonintersecting segments, so that every point is connected to four others?

Curls when wet. Why do waves curl up on top as they approach the shore?