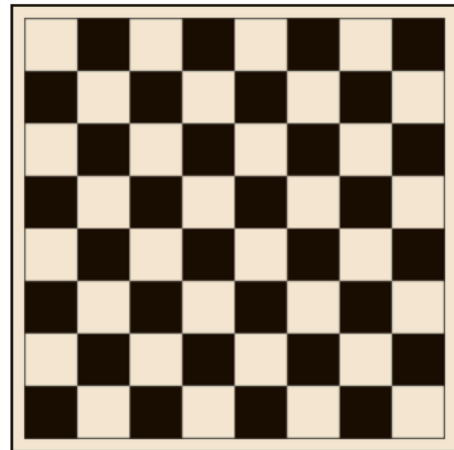


Rice Chessboard Puzzle

The ruler of India was so pleased with one of his palace wise men, who had invented the game of chess, that he offered this wise man a reward of his own choosing.



The wise man, who was also a wise mathematician, told his Master that he would like just one grain of rice on the first square of the chess board, double that number of grains of rice on the second square, and so on: double the number of grains of rice on each of the next 62 squares on the chess board.

This seemed to the ruler to be a small request, so he called for his servants to bring the rice. The servants began to place the rice on the chess board. 1 grain on the first square, 2 on the next, 4 on the next...and so on, doubling each time. The servants were very surprised by how much rice this started to add up to...

Your challenge: can you find out how many grains of rice were needed on the 12th square? And then can you find out how many were needed for the 64th square? And the total number?