

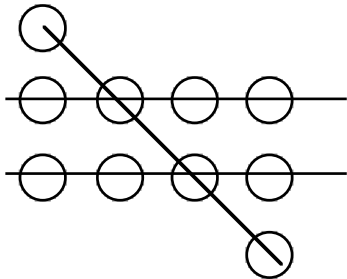
# Six Of The Best!

Time once again to pester your parents and frazzle your friends to make sure that YOU win the prize!

## The Questions

1) Calculate  $2^{16} - 2^{15} - 2^{14} - 2^{13} - 2^{12} - 2^{11} - 2^{10} - 2^9 - 2^8 - 2^7 - 2^6 - 2^5 - 2^4 - 2^3 - 2^2 - 2^1$

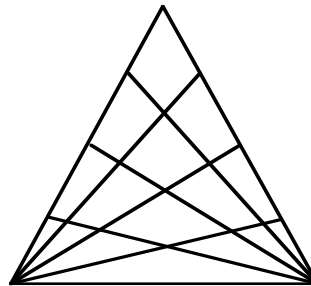
2) The arrangement below shows 10 coins in 3 rows of four:



Your task is to re-arrange the same ten coins to make **five** rows of four.

Each line must be straight and must contain exactly four coins.

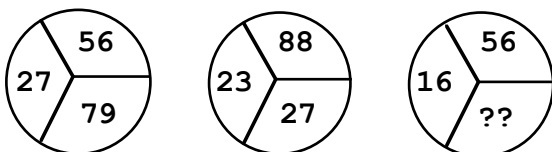
3) How many triangles and quadrilaterals are there in this diagram?



4) I am thinking of two numbers. When I add them up I get 12, but when I multiply them together I get 22. Find the two numbers as accurately as you can.

5) A 1-metre stick is broken into two pieces at random. What is the length of the shorter piece, on average?

6)



**THE PRIZE**  
1 kg of Cadbury's  
Dairy Milk  
Chocolate!