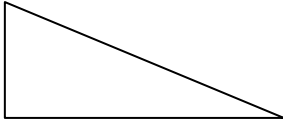


The MEI Conference 2007

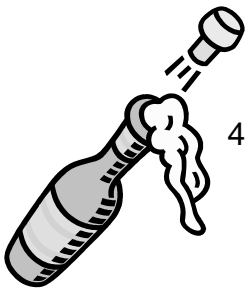
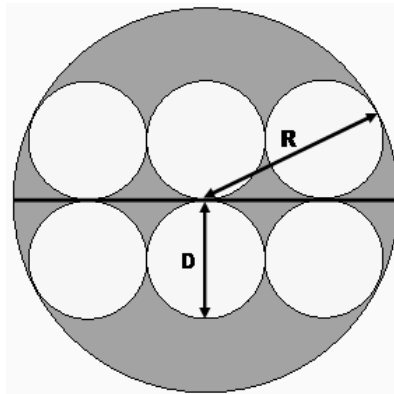
Thursday's Questions

1. What are the last two digits of 2007^{2007} ?



2. How many right-angled triangles, with all sides an integer length in centimetres, have shortest side length 2007cm?

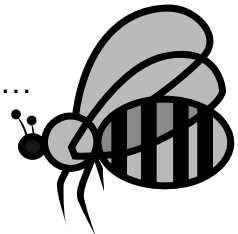
3. On both halves of the diameter of the large circle shown, three identical smaller circles are inscribed as shown. What is the ratio of R to D?



4. In (a variant of) the game fizz-buzz, the positive integers are called out in order starting from 1 but replacing any number which is a multiple of 3 with 'fizz' and replacing any number which is a multiple of 5 with 'buzz'. So the game begins:

1, 2, fizz, 4, buzz, fizz, 7, 8, fizz, buzz, 11, fizz, 13, 14, fizzbuzz, 16, ...

What is the 2007th number to be said aloud?



5. How many even numbers are there in the row of Pascal's triangle whose first two entries are 1 and 2007?

