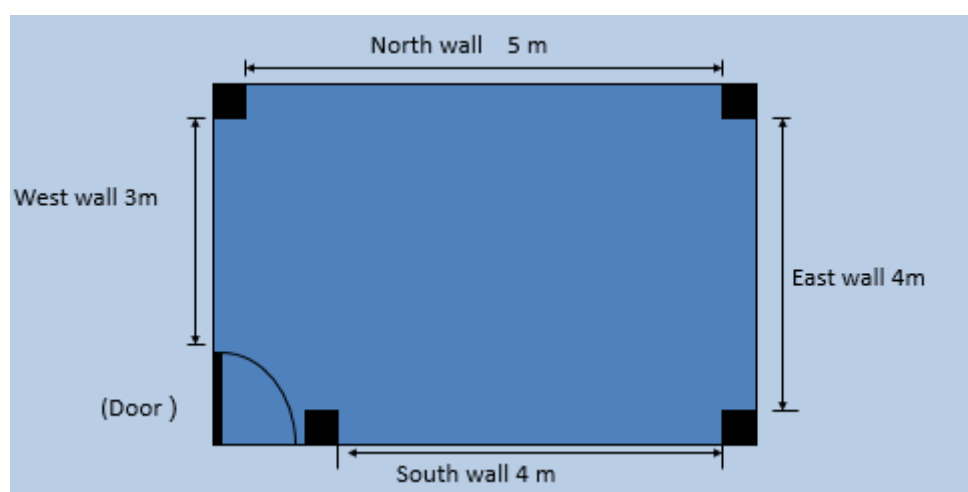Numeracy problem solving tasks – The library

Your school has a lottery grant to set up a new library.

Your head teacher has given you an empty classroom and you have to calculate how many bookcases and books you need to order.

This is the floor plan of the empty classroom which you must turn into a library. You may only put bookcases around the walls of the room, not in the middle.

North wall   5 m

West wall 3m

East wall 4m

(Door)

South wall 4 m

1. **Each bookcase measures 50cm wide**
   How many bookcases are you going to order to cover the walls of:
   a) the North wall?   b) the East wall?
   c) the West wall?   d) the South wall?
   e) the whole library?
   (Hint: You will need to think how many cm are in a m)

2. If each bookcase costs £5, how much money will you spend on bookcases for the library?

3. **Each bookcase has 7 shelves**
   If each shelf takes 10 books, how many books does each bookcase hold?

4. How many books will you need to fill:
   a) the North wall   b) the East wall
   c) the West wall   d) the South wall

e) the whole library?
(Hint: You will need to use your answers from question 1 to help you work this out)

5. Knowing that each shelf measures 50cm long and 10 books of the same size fit on a shelf, how wide is each book?

Extra challenge

6. **If each book in a bookcase costs £2, how much money will you spend on:**
   a) One shelf full of books?
   b) One bookcase full of books?
c) Each wall of books:
* North wall?
* South wall?
* East wall?
* West wall?
d) The whole library of books ?
   (Hint: you will need to use your answers from question 4 to work this out)

7. **You have now ordered all the books and the bookcases you need for the library. The books are being delivered from the bookshop in 4 large vans of equal size.**
   a)How many books are in each van?

   Each van contains 5 boxes.
   b)How many books are in each box?