

# KS4 Area and money problems

## Introduction

### Information for parents

The problems in this activity are all taken from GCSE papers. These questions are popular with examiners as they require students to use multiple areas of mathematics to solve the problems, they are also real problems which anybody could encounter whilst decorating at home or at work. There are 8 problems and they all follow a similar theme, there is an area which is to be covered (or occupied) by tiles or paint (or pigs) and the students are required to find how much of the materials should be bought and the cost of this. These problems are pitched at GCSE grade 4 / 5.

### Information for students

For each of these problems you will follow a similar strategy.

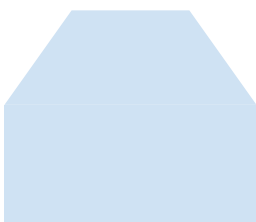
- find the area of the space to be covered
- Find the area of the object which is covering that area (tiles, paint...)
- Find how many of these would be needed (by division ..)
- Find how much it would cost.

A few things to watch out for,

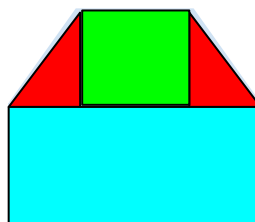
When finding areas, be sure that units are consistent, e.g. all in centimeters or all in metres.

When finding a compound area, you can split the shape into familiar rectangles and triangles or it is sometimes easier to think of the shape as a rectangle with pieces taken away.

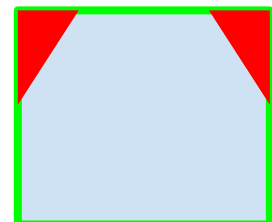
To find this area we could  
either use



these 2 triangles and 2  
rectangles added together



or a rectangle with  
the triangles taken away



If tiles come in boxes, find the area that a box would cover.

Remember that you can only buy full boxes or full tins, so if the calculation says that you need 3.2 tins, you would have to buy 4 (3 would not be enough).