**Alison's cinema has 100 seats.**

**One day, Alison notices that her cinema is full, and she has taken exactly £100.**

The prices were:

Adults £3.50

Pensioners £1.00

Children £0.85

She knows that not everyone in the audience was a pensioner.

**How many adults, pensioners and children were present?**

**Can there be 100 people and takings of exactly £100 if the prices are:**Adults £4.00  
Pensioners £1.00  
Children £0.50  
  
What if the prices are:  
  
Adults £5.00  
Pensioners £2.50  
Children £0.50  
  
**Here are some questions you might like to consider:**

* How many solutions are there for each set of prices?
* If I can find one solution, can I use it to help me find all the other solutions?
* Can you find alternative sets of prices that offer many solutions?
* What about exactly one solution?
* If a children's film has an audience of 3 children for every adult (no pensioners), how could the prices be set to take exactly £100 when all the seats are sold?
* What about a family film where adults, children and pensioners come along in the ratio 2:2:1?