Pizzeria Alfredo sells pizzas of varying sizes and numbers of toppings. They would like to have a program that computes the selling price of a pizza. The pizza base costs £0.001 per cm² and the cost for each topping is £0.002 per cm². In order to make profit, they multiply the cost of a pizza by a factor of 1.5.

**Question 1.** Write a function `alfredo` that takes as inputs the diameter (in cm) and the number of toppings of the pizza, both given as integers, and calculates the price of the pizza as a floating point number. Diameters must be between 10 and 100 cm and the numbers of toppings must be between 1 and 10. The program should reject inputs outside these ranges.

[60 marks]

**Question 2.** Write a function `menu` that takes as inputs the name of a pizza (given as a string), the diameter and the number of toppings of the pizza, both given as integers, and computes an entry in the menu for that pizza (as a string).

For example,

```
menu "Diavolo" 32 4
```

should yield the string

"Pizza Diavolo costs 10 pounds and 86 pence"

No fractions of pennies should be shown. The program should also avoid writing something like "0 pounds" or "0 pence".

The function `menu` should call the function `alfredo` from Question 1.

[40 marks]

All functions must be defined in Haskell, must have a signature and must be tested. Tests must be shown as comments in the script. For the script use the template file provided at the course web page. The script must contain both authors' names and student numbers at the beginning.

Please submit a printout with a submission slip attached in the wooden box on the 2nd floor next to the students office. The submission slip must be signed by both authors of the coursework. Submissions by a single author will be accepted, but it is strongly recommended to work in pairs.