1. Write a program based on the following pseudocode. The program will calculate the bill for a mobile phone contract on a Free Data or a Free Texts plan.

```
GET mobile phone plan type (D or T)

IF plan type is D or d
      SET monthly payment to 25
      GET number of texts sent
      IF number of texts > 100
            ADD text cost to monthly payment (( texts - 100) * .07))
            DISPLAY text cost

ELSE IF plan type is T or t
      SET monthly payment to 20
      GET amount of data used
      IF amount of data used > 10
            ADD data cost to monthly payment (( data - 10) * .01))
            DISPLAY data cost

DISPLAY monthly payment
```

2. Only people travelling to non EU destinations can buy duty free goods at Dublin airport. All others must pay full price. Write a program that will allow the cashier to enter the total price of purchases. The cashier must then enter "y" if the person is travelling within the EU and "n" if not.   If the destination is not within the EU the duty, 21%, is deducted from the total price calculated. The price owing must then be displayed on screen. Use a `switch` statement in your answer.

3. A 24 hour shuttle bus runs from Dublin airport to Dublin city centre every 30 minutes, on the hour and half hour. Write a program that will allow the user to enter a time and will determine and display the time of the next bus and length of the wait in minutes.   Sample output:

```
Enter hours:  12
Enter minutes: 15
The next bus is at 12:30
Your wait is 15 minutes
```