Decisions, Decisions 100 Points Total

Part A 10 Points

Write a complete program to determine whether the inputted integer year from the user is a leap year and then output an appropriate message.

Part B 25 Points

Write a complete program to accept from the user the integer birth year and output the age of the user this year (assume the birthday is earlier this year). Now, add code to test which decade of life the user is in and output an appropriate message. If the user is 19, then the user is a teenager or if the user is 33, then, the user is in his/her thirties. Your program should be able to handle someone in their sub-teens to over a hundred without a problem occurring.

Part C 10 Points

Modify Part B program to test whether the age is even or odd and output an appropriate message for either case.

Part D 10 Points

Modify Part C program to test whether the fourth root of the year is between 6.66 and 6.69 inclusive and output an appropriate message if it is and a different appropriate message if it is not.

Part E 15 Points

Modify Part B program to test whether the year is divisible by 3 or divisible by 5 or divisible by 11 and output an appropriate message for which case is true and an appropriate message if none are true.

Part F 15 Points

Modify Part E program to test whether the year is divisible by 3 and divisible by 5 and divisible by 11 and output an appropriate message if the year is divisible by all three numbers and a different message if it isn't divisible by all three. There are two different ways of doing this one – the obvious way and the shortcut way – do both.

Part G 15 Points

Write a complete program to calculate the day Easter will fall on based on these **INTEGER** equations by inputting the integer year and outputting the date of Easter. Using anything other than **short or int or long** will cost you all credit for this part!

Y = Year read in
N = Y - 1900
A = N - (N/19)*19
B = (7*A + 1)/19
C = 11*A + 4 - B
M = C - (C/29)*29
Q = N/4
S = N + Q + 31 - M
W = S - (S/7)*7
DATE = 25 - M - W
If DATE = 0 then Easter is March, 31
If DATE < 0 then Easter is March, (31 + DATE)
If DATE > 0 then Easter is April, DATE