Note: Take care of units. There will be mix of SI, MKS and CGS system.

1. Check to see, the year is a leap year or not.
2. Convert joules to kilowatt hour. ( 1kW = J / (1000 \* S) where S is in seconds ) Example: What is the power consumption of an electric circuit that has energy consumption of 90J for time duration of 3 seconds?
3. Convert watts to luminous flux.

(ΦV(lm) = P(W) × η(lm/W)

lumens = watts × (lumens per watt)

Example: What is the luminous flux of a lamp that has power consumption of 60 watts and luminous efficacy of 15 lumens per watt?

1. Convert velocity in km/hr to m/s. ( 1kph = 0.2777778 m/s ).
2. Car is traveling at a speed of 80 km/hr and a truck is stationed at a distance of 30 mts. Truck will start moving exactly after 3 second. If the car driver applies brake now find out whether car will hit the truck or not. ( distance = ((initial velocity + final velocity )/2 ) \* time ).
3. Aircraft lands with a velocity of 320 km/hr and remaining runway length is 1400 mts. Aircraft deceleration is 2.85 m/s2 . Check whether aircraft lands safely within the runway or not. (final\_velocity2 = initial\_velocity2 + 2\* acceleration \* distance).
4. Write a program to calculate the series 1 + 1/2! + 1/3! + .. upto N terms.
5. Write a program to calculate the sum of digits of a number.
6. Write a program which checks the 3 numbers are from a Fibonacci series (3, 5, 8 or 21, 34, 55).
7. Change the case of an alphabet.
8. Convert a binary number to decimal.
9. Convert a decimal number to binary.
10. Check entered number is a palindrome.
11. Convert a decimal number in the range from 0-1000 to its equivalent roman number.
12. Compute the power of an integer ‘m’, raised to a positive integer ‘n’. Example power(2,5) is 32.
13. Write a program to get the start index of a particular pattern from a input line. Example, searching pattern is “ould” in the set of lines

Ah Love! could you a I with Fate conspire

To grasp this sorry scheme of things entire,

Would not we shatter it to bits --- and then

Re-mould it nearer to the Heart’s Desire!