

1. Write a Python program to compute the volume of a sphere whose base radius is read off from the keyboard.

Code:

```
radius = float(input("Enter the radius of sphere "))  
volume=(4/3)*(22/7)*pow(radius,3)  
print(volume)
```

2. Write a Python program to input the number of days and print them in months, week, and day format. Assume that a month contains 4 weeks and 1 week contain 7 days. For eg: 129 days = 4 months, 1 Week, 2 days, and 25 days = 0 month, 3 weeks and 4 days

Code:

```
days=int(input("Enter the number of days "))  
month=days//30  
days=days%30  
weeks = days//7  
days=days%7  
print("number of month is {} number of week is {} number of days is {}".format(month,weeks,days))
```

3. Write a Python program to input time in seconds and print it in the form HH:MM:SS.

Code:

```
seconds=int(input("Enter the number of seconds "))  
hour=seconds//3600  
seconds=seconds%3600  
minutes= seconds//60  
seconds=seconds%60  
print("{}:{:}:{:}".format(hour,minutes,seconds))
```

4. Write a complete Python program that takes as input the coordinates of two points in the 3D plane and prints out the Euclidian distance between them.

Code:

```
import math
x1,y1,z1=eval(input("Enter x1,y1,z1 "))
x2,y2,z2=eval(input("Enter x2,y2,z2 "))
dis=math.sqrt(pow((x2-x1),2)+pow((y2-y1),2)+pow((z2-z1),2))
print("distances is ",dis)
```

5. Write a Python program that calculates and prints the number of seconds in a year(assume that a year has 365.25 days).

Code:

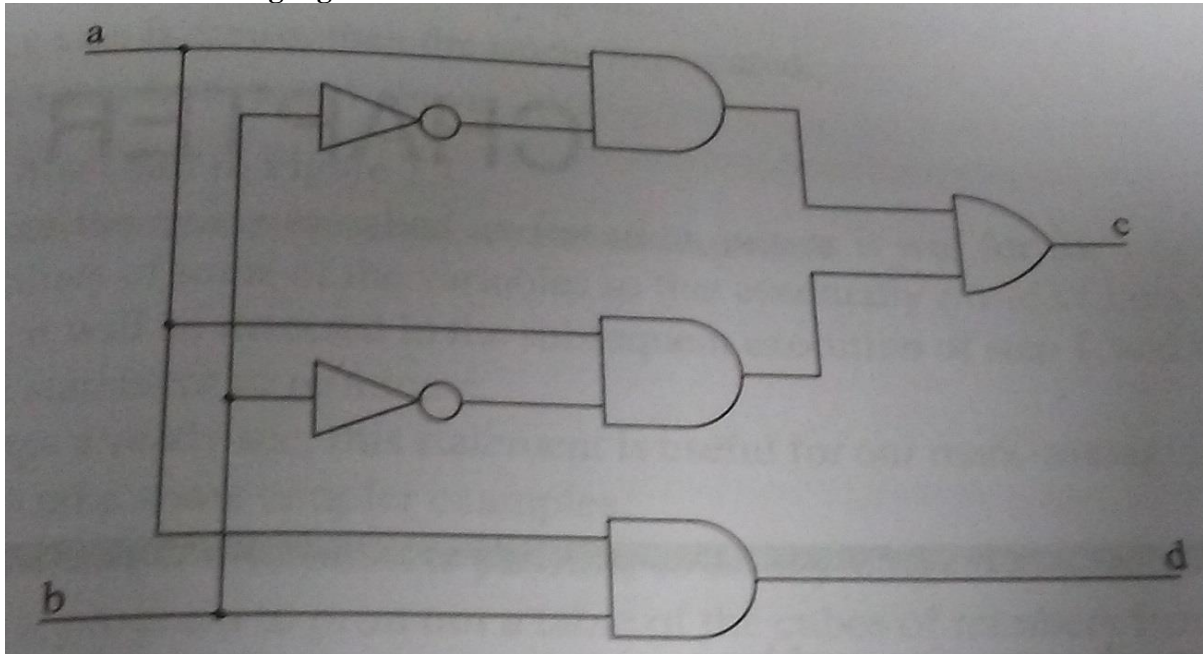
```
year=365.25
day=3600*24
sec=year*day
print("Number of seconds in year is ",sec)
```

6. Light travels at 3×10^8 meters per second. A light-year is the distance a light beam travels in one year. Write a Python program that calculates and displays the value of a light-year (assume that a year has 365.25 days).

Code:

```
lightspeed=3*pow(10,8)
seconds=365.25*24*3600
lightyear=lightspeed*seconds
print("The value of lightyear is ", lightyear)
```

7. Consider following digital circuit.



Write expressions of the outputs c and d. Write a Python program that reads combinations(0 and 1) of the inputs a and b and then accordingly compute the values of the outputs c and d. Test your program for all four combinations of 0 and 1.

Code:

```

a=int(input("a: "))
b=int(input("b: "))
not_b=not b
a_and_notb=a & not_b
c=a_and_notb & a_and_notb
d=a & b
print("c: ",c)
print("d: ",d)

```

8. Write a Python program that ask the restaurant cashier to enter in the price of an item and the program will compute CGST and SGST amount and display the total bill amount after adding CGST and SGST and finally rounding on customer's total bill amount. Assume that the CGST and SGST rates is equal to 2.5% each and the total amount owing is equal to the item price plus the amount of CGST and SGST. After this your program should prompt the cashier for the amount paid by the customer and display the amount of change that is owing. Your program must display the fractional rupees values to a maximum of two decimal places.

Code:

```

net_total=eval(input("Enter the net total "))

```

```
cgst=sgst=(2.5/100)*net_total
grand_total=net_total+cgst+sgst
print("Net total:", "%0.2f" %net_total)
print("CGST:", "%0.2f" %cgst)
print("SGST:", "%0.2f" %sgst)
print("grand Total:", "%0.2f" %grand_total)
grand_total=round(grand_total)
print("Rounded Total:", grand_total)
cash=eval(input("Enter the amount paid by customer "))
change=cash-grand_total
print("Cash:", cash)
print("Change:", change)
```