Question 1

Write a complete program to calculate the total price of a holiday package based on the selected package and number of adults and children input by the user. Use the given class:

```
class TravelPackage
{
    public:
    char package;
    int noAdult, noChild;
    float adultPrice, childPrice, discount, totalPrice;
};
```

Use the following requirements and sample input and output to write the program.

- Use *do…while* statement to prompt the user for correct package selection. If the input is incorrect display *"Invalid selection"* and prompt again for package selection.

- Use *switch* statement to determine the price based on the available package.

Package	Price (RM)
A	Adult = 1000.00 Child = 500.00
B	Adult = 800.00 Child = 600.00
C	Adult = 500.00 Child = 300.00

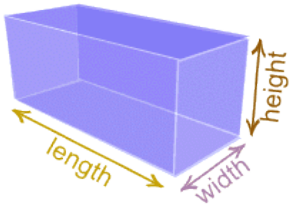
- Use *if* statement to deduct 20% from the total price if the price is greater than RM3000.00.

Sample Output Screen
Select travel package <A,B,C> : *L* Invalid selection. Select travel package <A,B,C> : *A* Enter no of adult : *4* Enter no of children : *3* Total price : RM4400.00

Question 2

Scenario: Finding the Volume of a Cuboid

A cuboid is a 3 dimensional shape.
So to work out the volume we need to know 3 measurements.



Look at this shape.
There are 3 different measurements:
Length, Width, Height

a) Given the class declarations in the program below, write the complete codes for required member functions based on your analysis of the program output.

Note: Your functions may be defined inside the class or outside the class.

```
#include<iostream>
using namespace std;

class Cuboid
{ int length, width, height, volume;
  public:
     void setdata();
     void findVolume();
     void display();
};

int main()
{ Cuboid Q;
  Q.setdata();
  Q.findVolume();
  Q.display();
  return 0;
}
```

Sample Output Screen

Enter the width, length, height of a Cuboid object :*4 8 2*

------Display Cuboid Data-----
Width :4 cm
Length :8 cm
Height :2 cm
Volume :64 cm^3

b) Based on your solution, include additional accessor functions to return the data members for this class. Remove the function call (**Q.display()**) in your main(), and display the data members for **Q** object by calling the accessor functions.

Question 3

a) Write a complete program based on the following information.

A. Create a class called **Purchase**.

(i) Data member (set to private) : ***name(char), code(char), qty(int), price(float)*** and ***total(float)***.

(ii) Member function (set to public) : define the member functions outside of the class.

(a) **set_data(…)**
To set all the data to the appropriate variables.

(b) **calculate()**
Calculate the total amount of payment to be made.

(c) **print()**
Display all the information on screen.

B. In main() function, do the following:

(i) Create an object of class Purchase called **p**.

(ii) Get inputs from the user and pass the data to method **set_data()** so that the values can be set to the appropriate variables.

(iii) Call function **calculate()** to calculate the total amount to be paid by a customer.

(iv) Call function **print()** to display all the information as shown below.

Sample Output Screen

```
==========================
      WELCOME
==========================
Enter name    : Jacob
Product code  : C101
Enter quantity : 2
Enter price   : RM 20
==========================
      RECEIPT
==========================
Name          : Jacob
Product Code  : C101
Quantity      : 2
Product Price : RM 20
Total Payment : RM 40
```

b) Modify the program above, so that it will continue to execute until there is no customer or 'N' to purchase another item.
(Use **do-while loop** for this program). The suggested output is shown below.

Sample Output Screen

```
======================
      WELCOME
======================
Enter name    : David
Product code  : C102
Enter quantity : 3
Enter price     : RM 30
======================
      RECEIPT
======================
Name            : David
Product Code    : C102
Quantity        : 3
Product Price   : RM 30
Total Payment : RM 90

You have another customer to purchase item? [Y/N]: Y

======================
      WELCOME
======================
Enter name    : James
Product code  : C103
Enter quantity : 1
Enter price     : RM 100
======================
      RECEIPT
======================
Name            : James
Product Code    : C103
Quantity        : 1
Product Price   : RM 100
Total Payment : RM 100

You have another customer to purchase item? [Y/N]: N
```

Question 4

Write a C++ program that contains:

- A constant global variable **SIZE** with value **8**.
- A class **Stationery_Inventory** with the following:
  - Private data members : **code *name* (*string*); *warehouses*[SIZE] (*int*)**
  - Public member functions:
    - **display_reverse( )**
      - Display the array elements of *warehouses* in reverse order using any looping structure.
    - **set_data(int*)**
      - Get user input for code *name.*
      - The function has a pointer argument.
      - In a *for* loop, use the pointer argument to initialize *warehouses* array.
    - A global object declaration, named **hold.**

- A function named **process()** :
  - Refer to label 'process()' at sample output.
  - Get user input for 8 values that should be stored in a local array.
  - Using global object **hold**, call function **set_data(…)**, passing the array and also call **display_reverse()** after that.

- In the main():
  i. Declare an object of the class above
  ii. Declare an array of 8 integer elements and initialize it with the values {5, 10, 15, 22, 20, 25, 30, 35}
  iii. Using the object (created at (i)), make function call to **set_data(….)** passing the array declared at (ii).
  iv. Using the object (created at (i)), make function call to **display_reverse().**
  v. Call **process()**.

Sample Output Screen

```
      SMART Stationery Shop
####################################
      Item Entry
------------------------------
Enter Stationery code: PT123
-------------------------
     The Inventory Info
-------------------------
Stationery code :PT123
Warehouse 1    :35
Warehouse 2    :30
Warehouse 3    :25
Warehouse 4    :20
Warehouse 5    :22
Warehouse 6    :15
Warehouse 7    :10
Warehouse 8    :5
------------------------------
   Colourful Book Holder Stock
------------------------------
Enter the stocks for 8 warehouses:
30
45
15
25
50
19
80
60

####################################
      Item Entry
------------------------------
Enter Stationery code: PT321
-------------------------
     The Inventory Info
-------------------------
Stationery code :PT321
Warehouse 1    :60
Warehouse 2    :80
Warehouse 3    :19
Warehouse 4    :50
Warehouse 5    :25
Warehouse 6    :15
Warehouse 7    :45
Warehouse 8    :30
```

process ( )

process ( )