# Question no 01:

```c
#include <stdio.h>
#include <math.h>

#define cost_per_portal  10000
#define cost_per_ship 50000
#define cost_per_distance 1000

const double costOfTeleportationPortals(int num_portals)
{
   return num_portals * cost_per_portal;
}

const double costOfSpaceShips(int num_ships, double
distance) {
   return num_ships * cost_per_ship + distance *
cost_per_distance;
}

double totalTransportationCost(int num_portals, int
num_ships, double distance) {
   double cost_portals =
costOfTeleportationPortals(num_portals);
   double cost_ships = costOfSpaceShips(num_ships,
distance);
   return cost_portals + cost_ships;
}

int main() {
   int num_portals = 1000;
   int num_ships = 2000;
   double distance = 10000;
   double total_cost =
totalTransportationCost(num_portals, num_ships,
distance);
```

```
    printf("The total cost of transportation is: %f",
total_cost);
    return 0;
}
```

## Question no 02:

```
#include <stdio.h>

int formulaOne(int a, int b) {
    return a + b;
}

int formulaTwo(int c) {
    return c * c;
}

int calc(int a, int b) {
    return a + b;
}

int main() {
    int result = calc(formulaOne(10, 20), formulaTwo(40))
+ calc(formulaOne(30, 50), formulaTwo(60));
    printf("Result: %d\n", result);
    return 0;
}
```

## Question no 03:

```
#include <stdio.h>

float calculate_revenue(float revenue) {
    return revenue;
}

float calculate_expenses(float expenses) {
    return expenses;
}
```

```c
float calculate_net_profit(float revenue, float expenses)
{
   return revenue - expenses;
}

float calculate_profit_margin(float revenue, float
expenses) {
   if (revenue == 0) {
       printf("Error: Division by zero.\n");
       return -1.0;
   }
   return calculate_net_profit(revenue, expenses) /
revenue;
}

float calculate_roi(float revenue, float expenses) {
   if (expenses == 0) {
       printf("Error: Division by zero.\n");
       return -1.0;
   }
   return calculate_net_profit(revenue, expenses) /
expenses;
}

int main() {
   float revenue, expenses;
   printf("Enter the revenue: ");
   scanf("%f", &revenue);
   printf("Enter the expenses: ");
   scanf("%f", &expenses);

   printf("Total revenue: %.2f\n",
calculate_revenue(revenue));
   printf("Total expenses: %.2f\n",
calculate_expenses(expenses));
```

```
    printf("Net profit: %.2f\n",
calculate_net_profit(revenue, expenses));
    float profit_margin = calculate_profit_margin(revenue,
expenses);
    if (profit_margin == -1.0) {
        printf("Error: Division by zero.\n");
        return 1;
    }
    printf("Profit margin: %.2f\n", profit_margin);
    float roi = calculate_roi(revenue, expenses);
    if (roi == -1.0) {
        printf("Error: Division by zero.\n");
        return 1;
    }
    printf("ROI: %.2f\n", roi);

    return 0;
}
```

## Question no 04:

```
#include <stdio.h>
#include <stdbool.h>

bool canPlaceBoxes(char box1, char box2) {
    // If both boxes are not the same color, they can be
placed
    if ((box1 == 'R' || box1 == 'r') && (box2 == 'B' ||
box2 == 'b')) {
        return true;
    } else if ((box1 == 'B' || box1 == 'b') && (box2 ==
'R' || box2 == 'r')) {
        return true;
    } else {
        return false;
    }
}
```

```c
int main() {
   char box1, box2;

   printf("Enter the color of the first box (r for red
and b for blue) : ");
   scanf("%c", &box1);
   printf("Enter the color of the second box (r for red
and b for blue) : ");
   scanf("%c", &box2);

   if (canPlaceBoxes(box1, box2)) {
       printf("The boxes can be placed.\n");
   } else {
       printf("Invalid placement.\n");
   }

   return 0;
}
```