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**Hometask 5**

#include<iostream>

using namespace std ;

is common in all

**question 1**

int main(){

int n,d,a,sum;

cout<<"enter the number of terms of the arithmetic series";

cin>> n;

cout<<"enter the common difference";

cin>> d;

cout<<"enter the first term";

cin>> a;

sum= n \* (2\*a+ ( n - 1 )\*d ) / 2 ;

cout<<"the sum is "<<sum<<endl;

}

**Question 2**

int main() {

int m = 7; // Number of rows in the diamond

int n = m;

for (int i = 1; i <= n; i += 2) {

for (int space = 0; space < (n - i) / 2; space++) {

cout << " ";

}

for (int j = 1; j <= i; j++) {

cout << "\*";

}

cout << endl;

}

for (int i = n - 2; i >= 1; i -= 2) {

for (int space = 0; space < (n - i) / 2; space++) {

cout << " ";

}

for (int j = 1; j <= i; j++) {

cout << "\*";

}

cout << endl;

}

return 0;

}

**Question 3**

int main() {

int num;

cout << "Enter a decimal number: ";

cin >> num;

cout << "Binary form is : ";

if (num == 0) {

cout << "0";

}

while (num > 0) {

cout << num % 2;

num /= 2;

}

cout << endl;

return 0;

}

**Question 4**

int main() {

int s, p;

cout << "Enter the first number: ";

cin >> s;

cout << "Enter the second number: ";

cin >> p;

int x = 1;

for (int i = 1; i <= s && i <= p; i++) {

if (s % i == 0 && p % i == 0) {

x = i;

}

}

int lcm = (s \* p) / x;

cout << "LCM of " << s << " and " << p << " is: " << lcm << endl;

return 0;

}