**C++ Programming**

**Sheet 3 – Repetition Controls (part2)**

**Q1. Using do while-loop write a C++ program that will read the number of students in the class and enter their marks and print the following**

**The average of the class**

**The number of passes and fails in the class.**

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| **#include <iostream > //Line 1**  **using namespace std; //Line 4**  **int main()**  **{**  **int numStd,sum = 0,count=1,pass=0,fail=0;**  **double avg;**  **cout<<"Enter Number of Std?";**  **cin >> numStd;**  **do**  **{**  **cout<<"Enter Std "<<count<<" grade?";**  **cin>>count;**  **if (count>=50)**  **pass++;**  **else**  **fail++;**  **sum += count;**  **}while (count<=numStd);**  **cout << "Number of pass" << pass << endl;**  **cout << "Number of Fail" << fail << endl;**  **avg=sum/numStd;**  **cout << "Average of class" << avg << endl;**  **return 0; //Line 36**  **}** |

**Q2.Using for-loop , write a C++ program that will print the given series and then print the sum of the series.**

1. **0.5, 1, 1.5, …………. 6**
2. **-100,- 90 , -80, …………. 0**

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| **#include <iostream > //Line 1**  **using namespace std; //**  **int main()**  **{**  **int sum=0;**  **for(int i=-100;i<=0;i+=10)**  **{**  **sum+=i;**  **cout<<i<<" ";**  **}**  **cout << "\nsum of series" << sum << endl;**  **return 0; //Line 36**  **}** |

1. **5, 10 ,15,70**

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| --- |
| **#include <iostream > //Line 1**  **using namespace std; //Line 4**  **int main()**  **{**  **int sum=0;**  **for(int i=5;i<=70;i+=5)**  **{**  **sum+=i;**  **cout<<i<<" ";**  **}**  **cout << "\nsum of series" << sum << endl;**  **return 0; //Line 36**  **}** |

**Q3. Write a C++ program to check whether a specific number is prime or not .**

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| **#include <iostream>**  **using namespace std;**  **int main()**  **{**  **int n, i;**  **bool isPrime = true;**  **cout << "Enter a positive integer: ";**  **cin >> n;**  **for(i = 2; i <= n / 2; ++i)**  **{**  **if(n % i == 0)**  **{**  **isPrime = false;**  **break;**  **}**  **}**  **if (isPrime)**  **cout << "This is a prime number";**  **else**  **cout << "This is not a prime number";**  **return 0;**  **}** |

## Q4. Write a c++ to Find Largest Number Using if Statement

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| **include <iostream>**  **using namespace std;**  **int main()**  **{**  **float n1, n2, n3;**  **cout << "Enter three numbers: ";**  **cin >> n1 >> n2 >> n3;**  **if(n1 >= n2 && n1 >= n3)**  **{**  **cout << "Largest number: " << n1;**  **}**  **if(n2 >= n1 && n2 >= n3)**  **{**  **cout << "Largest number: " << n2;**  **}**  **if(n3 >= n1 && n3 >= n2) {**  **cout << "Largest number: " << n3;**  **}**  **return 0;**  **}** |

### Write a c++ to Compute Power Manually

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| --- |
| #include <iostream>using namespace std;int main(){int exponent;float base, result = 1;cout << "Enter base and exponent respectively: ";cin >> base >> exponent;cout << base << "^" << exponent << " = ";while (exponent != 0) {result \*= base;--exponent;}cout << result;return 0;} |

**What is the output of the following**

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| --- | --- | --- |
| **a.**   |  | | --- | | **#include <iostream > //Line 1**  **#include <string> //Line 2**  **#include <iomanip> //Line 3**  **using namespace std;**  **int main()**  **{int i, j;**  **// for loop**  **cout<<"This is a for loop\n";**  **for(i = -5; i <= 0; i = i +1)**  **// initial, terminal condition and iteration**  **cout<<i;**  **cout<<"\n";**  **cout<<"\nThis is a while loop\n";**  **j = -5; // initial condition**  **// while loop**  **while(j <= 0) // terminal condition**  **{**  **cout<<j;**  **j = j + 1; // iteration**  **}**  **j = -5; // initial condition**  **// while loop**    **cout<<"\nThis is a do while loop\n";**  **do // terminal condition**  **{**  **cout<<j;**  **j = j + 1; // iteration**  **}while(j <= 0);**    **cout<<"\n All constructs generate same result...\n";**      **return 0;**  **}** | | **This is a for loop**  **-5-4-3-2-10**  **This is a while loop**  **-5-4-3-2-10**  **This is a do while loop**  **-5-4-3-2-10**  **All constructs generate same result...**  **--------------------------------**  **Process exited with return value 0**  **Press any key to continue . . .** |

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| --- | --- | --- |
| **b.**   |  | | --- | | #**include** <iostream.h>  #**include** <iomanip.h>  using namespace std;  int **main**()  { int nr;  cout << "Number Squared\n";  cout << "--------------\n";  for (nr = 1; nr <= 5; nr++)  cout << “ “ << nr << “ “ << (nr \* nr) << endl; return 0; } | | Number Squared  ------------------   1. 1 2. 2 3. 4 4. 3 5. 9 6. 4 7. 16 8. 5 25 |
| **c.**   |  | | --- | | int count = 1;  do  cout << count \*(count - 2) << " ";  while (count++ <= 5);  cout << endl; | | -1 0 3 8 15 24 |
| **d.**   |  | | --- | | int num = 12;  while (num >= 0)  {  if (num % 5 == 0)  break;  cout << num << " ";  num = num - 2;  }  cout << endl; | | 12 |
| **e.**   |  | | --- | | int num = 12;  while (num >= 0)  {  if (num % 5 == 0)  {  num++;  continue;  }  cout << num << " ";  num = num - 2;  }  cout << endl; | | 12 11 9 7 6 4 2 1 |