Sheet #1

1) #include <iostream>

using namespace std;

int main(){

int num1 , num2 ;

char op , exit = 'C' ;

while(exit != 'e' && exit != 'E'){

cout<<"Enter two integers with an operator between them:\n";

cin>>num1>>op>>num2;

if(op == '+'){

cout<< num1 + num2 ;

}

else if(op == '\*'){

cout<< num1\*num2 ;

}

else if(op == '-'){

cout<< num1-num2 ;

}

else if(op == '/'){

if(num2!= 0){

cout<< (float)num1/num2 ;

}

else{

cout<<"MATH ERROR.";

}

}

else if(op == '%'){

cout<< num1 % num2 ;

}

else{

cout<<"Invalid.";

}

cout<<"\nPress 'E' to exit or 'C' to continue\n";

cin>>exit;

}

cout<<"\nWelcome to our calculator!\n"; }

2) 1- #include <iostream>

using namespace std;

float area(float base , float height){

float area = .5\*base\*height;

return area;

}

int main(){

float b , h ;

cout<<"Enter the base of the triangle: ";

cin>>b;

cout<<"Enter the height of the triangle: ";

cin>>h;

cout<<"Area = "<<area(b,h)<<" cm^2";

}

2- #include <iostream>

using namespace std;

int greatest(int x , int y , int z){

int g;

if(x>=y && x>=z){g=x;}

else if(y>=x && y>=z){g=y;}

else{g=z;}

return g;

}

int main(){

int x , y , z ;

cout<<"Enter the first number: ";

cin>>x;

printf("Enter the second number: ");

cin>>y;

printf("Enter the third number: ");

cin>>z;

cout<<greatest(x , y , z)<<" is the greatest number.";

}

3- #include <iostream>

using namespace std;

char grade(float x , float y , float z){

char c;

float av = (x+y+z)/3.0 ;

if(av>=90){c='A';}

else if(av>=70 && av<90){c='B';}

else if(av>=50 && av<70){c='C';}

else{c='F';}

return c;

}

int main(){

float x , y , z ;

cout<<"Enter the first score: ";

cin>>x;

cout<<"Enter the second score: ";

cin>>y;

cout<<"Enter the third score: ";

cin>>z;

cout<<"Your grade is "<<grade(x , y , z);

}

4- #include <iostream>

using namespace std;

string even\_or\_odd(int x){

if(x%2==0){return "EVEN NUMBER!";}

if(x%2!=0){return "ODD NUMBER!";}

}

int main(){

int x;

cout<<"Enter a number to find whether it is even or odd: ";

cin>>x;

cout<<even\_or\_odd(x);

}

5- #include <iostream>

using namespace std;

string comparison(string x , string y){

if(x>y){return "\n"+x+" is greater than "+y+" .\n";}

else if(x<y){return "\n"+y+" is greater than "+x+" .\n";}

else{return "\n"+x+" and "+y+" are equal!\n";}

}

int main(){

string x , y ;

cout<<"Enter two numbers to compare between them: ";

cin>>x>>y;

cout<<comparison(x , y);

}

6- #include <iostream>

using namespace std;

string triangle(int x , int y , int z){

if(x==y&&y==z){return "\nEquilateral triangle.\n";}

else if(x==y || y==z || x==z){return "\nIsosceles triangle.\n";}

else{return "\nScalane triangle.\n";}

}

int main(){

float x , y , z ;

cout<<"Enter three angles of a triangle to determine it's type: ";

cin>>x>>y>>z;

cout<<triangle(x , y , z);

}

7- #include <iostream>

using namespace std;

float calc(int num1 , char op , int num2){

if(op == '+'){

return num1 + num2;

}

else if(op == '\*'){

return num1\*num2;

}

else if(op == '-'){

return num1-num2;

}

else if(op == '/'){

if(num2!= 0){

return num1/num2;

}

else{

cout<<"MATH ERROR.";

}

}

else if(op == '%'){

return num1 % num2;

}

else{

cout<<"Invalid.";

}

}

int main(){

int num1 , num2 ;

char op;

cout<<"Enter two integers with an operator between them:\n";

cin>>num1>>op>>num2;

cout<<calc(num1 , op , num2);

}

8- #include <iostream>

using namespace std;

string astrik(int){

for(int rows=7 ; rows>=1 ; rows--){

for(int i=rows ; i>=1 ; i--){

cout<<"\*";

}

cout<<"\n";

}

}

int main(){

cout<<astrik(7);

}

9- #include <iostream>

using namespace std;

string astrik(int){

for(int rows=1 ; rows<=9 ; rows+=2){

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

printf("\*");

}

printf("\n");

}

for(int rows=1 ; rows<=9 ; rows+=2){

for(int i=9 ; i>=rows ; i--){

printf("\*");

}

printf("\n");

}

}

int main(){

cout<<astrik(10);

}

10- #include <iostream>

using namespace std;

int natural(int n){

int sum = 0 ;

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

sum+=i;

}

return sum;

}

int main(){

int n;

cout<<"Enter a number to calculate the sum of all numbers from one to it: ";

cin>>n;

cout<<"\nSUM = "<<natural(n)<<"\n";

}

11- #include <iostream>

using namespace std;

int sum(int x){

int sum = 0 ;

while(x!=0){

sum+=x%10;

x/=10;

}

return sum;

}

int main(){

int x;

cout<<"Enter a number to calculate the sum of it's digits: ";

cin>>x;

cout<<"\nSum of all digits = "<<sum(x)<<"\n";

}

3) #include<iostream>

using namespace std;

int diff(int x , int y){

return x-y;

}

int main(){

int x , max1=0 , min1=999999;

for(int i=1 ; i<=3 ; i++){

cout<<"Enter the integer number "<<i<<": ";

cin>>x;

if(x>max1){max1 = x;}

if(x<min1){min1 = x;}

}

cout<<"\n"<<max1<<" is the greatest value.\n";

cout<<"\n"<<min1<<" is the smallest value.\n";

cout<<"\nDifference between them = "<<diff(max1,min1)<<"\n";

}

4) #include<iostream>

using namespace std;

int sum(int n){

if(n!=0){return n+sum(n-1);}

else{return n;}

}

int main(){

int n;

cout<<"Enter a number to calculate the sum of all numbers from one to it: ";

cin>>n;

cout<<"\nSum = "<<sum(n)<<"\n";

}

5) #include<iostream>

using namespace std;

int CheckPrime(int i,int num){

if(num==i){return 0;}

else if(num%i==0){return 1;}

else{return CheckPrime(i+1,num);}

}

int main()

{

int num;

cout<<"Enter a number to check whether it is a prime number or not: ";

cin>>num;

if(CheckPrime(2,num) == 0){cout<<"\nIt is a Prime Number.\n";}

else{cout<<"\nIt is not a Prime Number.\n";}

}

6) #include <iostream>

using namespace std;

void reverseSentence();

int main() {

printf("Enter a sentence: ");

reverseSentence();

return 0;

}

void reverseSentence() {

char c;

scanf("%c", &c);

if (c != '\n') {

reverseSentence();

printf("%c", c);

}

}

7) This program returns the multiplication of the two numbers the user enters.