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- SUBJECT: PROGRAMMING FUNDAMENTAL
- SUBMIT TO: DR. FAZAL MALIK

Q.1 Read A, B and C representing the three sides of a triangle. Write a program to find out its area the formula is given below:

$$\text{Area} = \sqrt{S(S - A)(S - B)(S - C)}$$

$$\text{Where } S = \frac{A+B+C}{2}$$

ANSWERS:

```
#include <iostream>
#include <conio.h>
#include <math.h>
using namespace std;
main()
{
    float A,B,C,S,area;
    cout<<"enter the value of A\n";
    cin>>A;
    cout<<"enter the value of B\n";
    cin>>B;
    cout<<"enter the value of C\n";
    cin>>C;
    cout<<"finding S\n S=";
    S=(A+B+C)/2;
    cout<<S;
    cout<<"\nfinding area\n area=";
    area=sqrt(S*(S-A)*(S-B)*(S-C));
    cout<<area;
}
```

Q.2 Write a C++ program to get marks obtained by a student in percentage **P** and then find the division according to the below rules:

- If Percentage P is above or equal to 60 then display.....1st Division.
- If Percentage P is between 50 & 59 then display.....2nd Division.
- If Percentage P is between 40 & 49 then display.....3rd Division.
- If Percentage P is less than 40 then display.....Fail.

ANSWERS:

```
#include <iostream>
#include <conio.h>
using namespace std;
main()
{
    int number,percentage;
    cout<<"marks of student\n";
    cin>>number;
```

```

percentage=number*100/550;
cout << "Student get"<< percentage <<"% marks\n";
if (percentage>=60)
{
    cout<<"1st division";
}
else if (percentage<=50 && number>=59)
{
    cout<<"2nd division";
}
else if (percentage<=40 && number>=49)
{
    cout<<"3rd division";
}
else
{
    cout<<"Fail";
}
}

```

Q.3 Write a C++ program to convert 5 feet to the equivalent number of (a) Inches (b) Yards. Where 1foot =12 Inches and 1 yard=3 feet)

ANSWERS :

```

#include <iostream>
#include <conio.h>
using namespace std;
main()
{
    float feet =5;
    float a,b;
    cout<<"converting 5 feet in inches\n";
    a=feet*12;
    cout<<a<<"inches";
    cout<<"\nconverting 5 feet in yards\n";
    b=feet/3;
    cout<<b<<"yards";
}

```

Q.4 Write a C++ program to find the sum of the following series:

2+4+6+8+10

ANSWERS :

```

#include <iostream>
#include <conio.h>
using namespace std;
main()
{
    int a,sum=0;
    for (a=1;a<=10;a++)
    {
        if (a%2==0)
        {
            sum=sum+a;
        }
    }
}

```

```
}  
cout<<sum;  
}
```

- Q.5 Write a C++ program to input Hours Worked and Hour Rate of an Employee. Calculate and display the Gross-Pay, Tax and Net-Pay; where
Gross-Pay=Hour-Worked*Hour-Rate
Tax=10% of Gross-Pay
Net-Pay=Gross-Pay - Tax

ANSWERS :

```
#include <iostream>  
#include <conio.h>  
using namespace std;  
main()  
{  
    float worked_hours, hours_rate, gross_pay, Tax, Net_pay;  
    cout<<"Enter worked hours = ";  
    cin>>worked_hours;  
    cout<<"enter rate hours = ";  
    cin>>hours_rate;  
    cout<<"Gross_pay is = ";  
    gross_pay=worked_hours*hours_rate;  
    cout<<gross_pay;  
    cout<<"\nTax is = ";  
    Tax=gross_pay*10/100;  
    cout<<Tax;  
    cout<<"\nnet pay is = ";  
    Net_pay=gross_pay-Tax;  
    cout<<Net_pay;  
}
```