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Machine exercise - 1st.

Q1. circumference and area of a circle.
→ code:-

```
# include <iostream.h>
using namespace std;
int main()
{
    int area, radius, circumference
```

```
Cout << "Enter the radius of circle";
cin >> radius;
```

```
area = 3.14 * radius * radius;
```

```
Circumference = 2 * 3.14 * radius;
```

```
Cout << "Area of circle" << area << endl;
```

```
Cout << "circumference of circle" << circumference << endl;
return 0;
```

```
}
```

Output :-

Enter the radius of circle : 10

Area of circle : 314

Circumference of circle : 62.8

Q2. Swap two numbers with third variable.
⇒ Code :-

```
# include <iostream.h>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    int a = 5, b = 10, temp;
```

```
    cout << "Before swapping:" << endl;
```

```
    cout << "a = " << a << ", b = " << b << endl;
```

```
    temp = a;
```

```
    a = b;
```

```
    b = temp;
```

```
    cout << "After swapping." << endl;
```

```
    cout << "a = " << a << ", b = " << b << endl;
```

```
    return 0;
```

```
}
```

Output:-

Before swapping:

$$a = 5, b = 10$$

After swapping:

$$a = 10, b = 5$$

Q3. Swap two number without using third variable.

⇒

Code:-

```
#include <iostream.h>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    int x=10, y=5;
```

```
    x = x+y; // x now becomes 15
```

```
    y = x-y; // y becomes 10
```

```
    x = x-y; // x becomes 5
```

```
    cout << "After swapping: x = " << x << ", y = " << y;
```

```
}
```

```
}
```

Output:-

After swapping: $x = 5, y = 10$

Q4. Swap two numbers using multiplication and division.

⇒ Code:-

```
# include<iostream.h>
```

```
using namespace std;  
int main()  
{
```

```
    int a, b, c;
```

```
    cout << "Enter the two no.";
```

```
    cin >> a >> b;
```

```
    C = a * b;
```

```
    cout << "\n product of two no." << C;
```

```
    C = a / b;
```

```
    cout << " divide of two no!" << C;
```

```
    return 0;
```

```
}
```

Output:-

Enter the no. a and b:

8

2

Product of two no. = 16

divide of two no. = 4

Q5. Calculate area and perimeter of rectangle.

⇒ Code :-

```
# include <iostream.h>
```

```
using namespace std;
```

```
{ int main()
```

```
    int area, length, breath, Perimeter;
```

```
    cout << "Enter the length and breath of rectangle";  
    cin >> length >> breath;
```

```
    area = length * breath;
```

```
    cout << "Area of rectangle: " << area << endl;
```

```
    Perimeter = 2 * (length + breath);
```

```
    cout << "Perimeter of rectangle: " << Perimeter << endl;
```

```
    return 0;
```

```
}
```

Output :-

Enter the length and breadth of rectangle:

4

2

Area of rectangle: 8

perimeter of rectangle: 12

Q6. Calculate area of triangle using heron's formula.

⇒ Code :-

```
# include <iostream.h>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
float a,b,c,s,Area;
```

```
cout << " Enter three sides of triangle: ";
```

```
cin >> a >> b >> c;
```

```
s = (a+b+c)/2;
```

```
Area = sqrt(s*(s-a)*(s-b)*(s-c));
```

```
cout << " Area of triangle is: ";
```

```
return 0;
```

```
}
```

Output:-

Enter three sides of triangle:

5.6

8.1

10.3

Area of triangle is: 22.565

Q7. Calculate simple interest and compound interest.

→ Code:-

```
# include <iostream.h>
# include <math.h>

using namespace std;
```

```
int main()
{
```

```
float p,r,t,ci,si;
```

```
Cout<<"enter principal, rate, and time : \n";
cin>>p>>r>>t;
```

```
ci = P*pow((1+r/100),t);
```

```
Cout<<"In Compound interest = "<<ci;
```

```
si = (P*r*t)/100;
```

```
Cout<<"In simple interest = "<<si;
```

```
return 0;
```

```
}
```

Output :-

Enter principal, rate and time:

1000

2

4

Compound interest = 1082.43

Simple interest = 80

Q8. Find minimum among two numbers without using Comparison operator. Hint: use abs function

⇒ Code:-

```
# include <iostream.h>
# include <math.h>

using namespace std;
void main()
{
    double first;
    double second;
    cout << "\n enter the first number= ";
    cin >> first;
    cout << "\n enter the second number= ";
    cin >> second;

    cout << "\n minimum= " << min(first, second);

    return 0;
}
```

Output :-

Enter first number: 4

Enter second number: 10
minimum: 4

Q9. Find ASCII value of any character.

⇒ Code :-

```
#include <iostream.h>
```

```
using namespace std;  
void main()  
{
```

```
cout<<"\n enter a character= ";
```

```
cin>>c;
```

```
cout<<" ASCII value of "<<c<<": is "<<int(c);
```

```
return 0;
```

```
}
```

Output:-

Enter a character = A

ASCII value of A is = 65

Enter a character = a

ASCII value of a is = 97

Q10. Convert Days into Years, weeks and Days.

⇒ Code :-

```
# include <iostream.h>
# include <conio.h>
# include <math.h>
void main()
{
    clrscr();
    int y,a,w,d;
    cout << "Enter total number of day= ";
    cin >> d;
    a = d/365;
    y = d/365;
    w = a/7;
    d = a%7;
    cout << "\n years= " << y;
    cout << "\n weeks= " << w;
    cout << "\n days= " << d;
}
return 0;
```

Output:-

Enter total number of days = 1364

years = 3

Weeks = 38

Days = 4