Math Library and IO formatting

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Functions in <cmath>

abs(x)	computes absolute value of x
sqrt(x)	computes square root of x, where x >=0
pow(x,y)	computes x^y
ceil(x)	nearest integer larger than x
floor(x)	nearest integer smaller than x
exp(x)	computes e^x
log(x)	computes ln x, where x >0
log10(x)	computes $\log_{10}x$, where x>0
sin(x)	sine of x, where x is in radians
cos(x)	cosine of x, where x is in radians
tan(x)	tangent of x, where x is in radians

Manipulators and methods

- setf() and unsetf()

Flag	Meaning
ios:: showpoint	display the decimal point
ios::fixed	fixed decimal notation
ios::scientific	scientific notation
ios::right	right justification
ios::left	left justification

- Manipulators in <iomanip>
  - –setprecision(n)
  - –setw(n)

Using IO manipulators

```
#include <iostream>
#include <iomanip>
#include <cmath>
using namespace std;
const double PI=acos(-1.0);
int main() { // Declare and initialize objects.
double radius(4.6777), area;
area = PI*radius*radius;
cout << setprecision(4) << "The radius of the circle is: " << setw(10) << radius
     << " centimeters" << endl;

cout.setf(ios::scientific);

cout << "The area of the circle is: " << setw(12) << area << " square
    centimeters" << endl;
return 0; }
```

Lab2

- Applying the concepts.