Total Points (100 pts)

Assignment #3

Your third programming assignment consists of three C++ programs. It should compile correctly and produce the specified output. Give meaningful name to the program and submit it to eLearning.

Please note that the program should comply with the commenting and formatting rules we discussed in class.

Program #1   30 points

Given three floating-point numbers x, y, and z, output x to the power of z, x to the power of (y to the power of z), the absolute value of y, and the square root of (x*y to the power of z).

Sample Output.

```
Enter three floating point number: 5.0 6.5 3.2
The values are: 172.466 1.29951e+279 6.5 262.43
```

Program #2   40 points

Given a long long integer representing a 10-digit phone number, output the area code, prefix, and line number using the format (800) 555-1212.

Ex: If the input is:

8005551212

the output is:

(800) 555-1212

Hint: Use % to get the desired rightmost digits. Ex: The rightmost 2 digits of 572 is gotten by 572 % 100, which is 72.

Hint: Use / to shift right by the desired amount. Ex: Shifting 572 right by 2 digits is done by 572 / 100, which yields 5. (Recall integer division discards the fraction).

For simplicity, assume any part starts with a non-zero digit. So 0119998888 is not allowed.

Sample Output:

> Enter a phone number: 8002364587
>
> The number in required format is: (800) 236-4587

Program #3   30 points

Given four values representing counts of quarters, dimes, nickels and pennies, output the total amount as dollars and cents.

Output each floating-point value with two digits after the decimal point, which can be achieved by executing
`cout << fixed << setprecision(2);` once before all other cout statements.

Ex: If the input is:

```
4 3 2 1
```

where 4 is the number of quarters, 3 is the number of dimes, 2 is the number of nickels, and 1 is the number of pennies, the output is:

```
Amount: $1.41
```

For simplicity, assume input is non-negative.

Sample Output:

> Enter quarters, dimes, nickels, and pennies: 1 2 3 4
>
> The total amount is: $0.64