Problem 1 Two numbers are considered as very different if they differ by more than 10.

Write a C++ function called areVeryDifferent that determines whether two integers are very different.

For example, your function could be used in the following program.

```cpp
int main() {
    int x = 4, y = 10, z = -4;
    if (areVeryDifferent(x, y)) cout << "x and y are very different" << endl;
    if (areVeryDifferent(x, z)) cout << "x and z are very different" << endl;
    if (areVeryDifferent(y, z)) cout << "y and z are very different" << endl;
    return 0;
}
```

The output from this program would be:
```
y and z are very different
```

Problem 2 Write a function called countChange that uses four parameters q, d, n, and p and converts the value of q quarters, d dimes, n nickels, and p cents into dollars.

For example, a program that uses the function countChange follows.

```cpp
int main() {
    int q = 10, d = 5, n = 1, p = 2;
    double x = countChange(q, d, n, p);
    cout << "You have $" << x << endl;
}
```

It should print:
```
You have $3.07
```

Problem 3 Write a function called quadratic that calculates the value of a quadratic function ax^2 + bx + c.

For example, a program that uses the function quadratic follows.

```cpp
int main() {
    double a = 1.0, b = 2.2, c = 1.21, x = 0.1;
    cout << quadratic(a, b, c, x) << endl;
    return 0;
}
```

Problem 4 Write title lines (header lines or prototypes) for the following functions. Do not supply the blocks for the functions.

(a) A function called firstDigit which returns the first digit of an integer.

(b) A function called sqrt that returns the square root of a double precision parameter.

(c) A function called oddString which returns a string made up of the characters in odd position of an input string.

(d) A function called randomWord which is to create and return a random word.

Problem 5 Write a function isPrime to test whether a parameter is prime. Apply the function in a program which prints all the prime numbers up to 100.

Problem 6 Write a function max3 which uses three parameters and returns the value of the largest. Test the function in a program that determines the largest of 3 quiz scores.
Problem 7 Write a C++ program which does the following:
1. Ask the user for the radius of a circle.
2. Write and call a function to calculate the circumference of a circle given a radius. The prototype (title-line) is as follows: `double circumference(double radius);`

The formula for the circumference of a circle with radius \( r \) is \( C = 2\pi r \). You can approximate \( \pi \) as 3.14.

Example output:
What is the radius of the circle? 5
The circumference is 31.4